No. 4256

IN THE

United States Circuit Court of Appeals

FOR THE NINTH CIRCUIT.

WILLIAM R. RAY and W. S. RAY MANUFACTURING COMPANY (a corporation),

Appellants and Cross-Appellees,

vs.

BUNTING IRON WORKS,

Appellee and Cross-Appellant.

BRIEF ON BEHALF OF DEFENDANT-APPELLEE BUNTING IRON WORKS

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TOPICAL INDEX

DEFENDANT'S EXHIBITS

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I.

STATEMENT OF FACTS

This case comes before this Court on plaintiff's appeal from a final decree dismissing the bill of complaint.

Plaintiffs' patents and the respective claims thereof, charged to be infringed, are as follows:

Claims 3, 4, 7, 8, 9, 10, 11 and 12 of United States

letters patent No. 1,193,819, issued on August 8, 1916, to W. R. Ray for Oil Burners.

Claims 1 to 6, and 14 to 20, inclusive, of United States letters patent No. 1,285,376, issued on November 19, 1918, to W. R. Ray for Oil Burners.

The lower Court found and decreed all said claims to be void for *want of invention.* In arriving at this conclusion the lower Court merely applied, to the undisputed facts, the well established principles of patent law as announced in the following cases:

In the case of *Huebner-Toledo Breweries Co.* vs. *Mathews Gravity Carrier Co.,* 253 Fed., 435, 447, the Circuit Court of Appeals for the Sixth Circuit, said:

> "It is said that appellee's carrier is not anticipated by any single patent; but it is not necessary to show complete anticipation in a single patent. The selection and putting together of the most desirable parts of different machines in the same or kindred art, making a new machine, but in which each part operates in the same way as it operated before and effects the same result, cannot be invention; such combinations are in the nature of things the evolutions of the mechanic's aptitude rather than the creations of the inventor's faculty. *Thompson* vs. *Boisselier,* 114 U. S. 1, 11, 5 Sup. Ct. 1042, 29 L. Ed. 76; *Luten* vs. *Whittier,* 251 Fed., 590, C. C. A., decided by this Court May 7, 1918; *Elite Mfg. Co.* vs. *Ashland Mfg. Co.,* 235 Fed., 893, 895, 149 C. C. A. 205 (C. C. A. 6); *Kelly* vs. *Clow,* 89 Fed., 297, 303, 32 C. C. A. 205 (C. C. A. 7); *Keene* vs. *New Idea Spreader Co., supra,* 231 Fed. at pages 708, 709, 145 C. C. A. 589.

Assuming, as counsel claim, that large sales have been made of the carriers in issue, still commercial success is never a safe criterion, except in cases of doubtful validity of the patent; such success cannot aid claims that are clearly without patentable novelty. *Olin* vs. *Timken,* 155 U. S. 141, 155, 15 Sup. Ct. 49, 39 L. Ed. 100; *Grinnell Washing Machine Co.* vs. *Johnson Co., supra; Keene* vs. *New Idea Spreader Co., supra,* 231 Fed., at page 710, 145 C. C. A. 589."

To the same effect are the following words of the same Circuit Court of Appeals in the case of *Elite Mfg. Co.* vs. *Ashland Mfg. Co.,* 235 Fed. 893; 895:

"The various elements shown in plaintiff's patent and mentioned in its respective claims are all found in the prior art, performing respectively the same function in the same way and producing the same result as in plaintiff's device. We are not unmindful that to combine old parts in such manner as to produce a new result by their harmonious co-operation may be patentable; but where the combination is not only of old parts, but obtains old results, without the addition of any new and distinct function, it is not patentable. There is no invention in merely selecting and assembling, as Burkholder did, the most desirable parts of different mechanisms in the same art, where each operates in the same way in the new device as it did in the old, and effects the same results. *Goodyear Tire & Rubber Co.* vs. *Rubber Tire Wheel Co.,* 116 Fed. 363, 369, 53 C. C. A. 583; *Overweight Counter-balance Co.* vs. *Henry Vogt Machine Co.,* 102 Fed. 957, 961, 962, 43 C. C. A. 80; *Sheffield Car Co.* vs. *D'Arcy,* 194 Fed. 686, 693, 116 C. C. A. 322. All of these cases were decided by this Court. It requires only

> the commonest kind of skill, such as any mechanic ordinarily skilled in the art could and would have exercised, to borrow, as the patentee did, from well known styles of jack one or more of their operative parts and put the same into another, there to perform the same function as such respective parts performed in the first. The plaintiff's lifting-jack patent, for want of novelty and patentable invention, cannot be sustained."

That no invention is required to merely select and assemble old instrumentalities in aggregation, is referred to in the case of *Turner* vs. *Moore,* 211 Fed., 466, 467, wherein the Circuit Court of Appeals for the Eighth Circuit, said:

> "The column and flat slab construction was old in the art, and was so declared by the Patent Office. Except as to the elbow rods the evidence before the trial Court was full and convincing that none of the plaintiff's particular elements were new. This was so completely established by prior patents, publications, and designated structures that no pains need be taken to enumerate and discuss them. Counsel argue that as no single prior patent, publication, or structure exhibited all of the elements of the claims in suit, the defense must fail. But if they were clearly disclosed before, though separately, it was not invention to bring them together as the plaintiff did. For example, it is not invention to take a fire pot from an old stove, a flue from another and a coal reservoir from a third and assemble them, where each merely performs its old functions in its new location. *Hailes* vs. *Van Wormer,* 20 Wall. 353, 22 L. Ed. 241. Plaintiff's column rods were, in function, the old column rods, and nothing more. His floors of flat slabs without beams or girders

were old and so of their reinforcement by groups of rods passing in various directions over the points of support. The cantilever rods extending across the tops of the columns into the supported structure were also old. The plaintiff merely selected and assembled old things in aggregation, and pushed them with enterprise and publicity."

The defenses relied on are: Want of invention, anticipation, prior invention and use, and estoppel.

For convenience we shall refer to the appellants as plaintiffs and to the appellee as defendant. Also for convenience we shall refer to the Ray 1916 patent, as the first Ray patent, and to the 1918 Ray patent, as the second Ray patent.

All italics herein may be deemed ours.

II.

Rotary Type of Oil Burner

The rotary or centrifugal type of oil burner comprises (1) a rotary atomizer or cup; (2) means for rotating the cup; (3) means for creating a current of air for discharge about the periphery of the cup; and (4) means for supplying oil to the cup.

The oil, fed into the bottom of the cup, is discharged by centrifugal force from the periphery of the cup at right angles to its axis of rotation and in an atomized condition. The atomized oil, so discharged at right angles to the cup's axis of rotation, meets the annular current of air, surrounding the cup, and is deflected from such right angle direction to a greater or less extent, according to the direction and velocity of the air current.

As the atomized oil is discharged from the cup, by centrifugal force, at right angles to the cup's axis of rotation, it is apparent that a *flat* flame, at right angles to the cup's axis of rotation, would be produced in the absence of any air current.

To produce other than such *flat* flame, it is necessary to utilize the air current. Furthermore, it is quite obvious that the *direction and force* of the air current determines and fixes the *form of flame* produced.

If the direction of the current of air, surrounding the cup, is *parallel* to the cup's axis of rotation, the

atomized oil will be deflected to a direction *parallel* with such axis and in the "form of a shaft or column of inflammable vapor," so that a long, straight-shot flame will be produced.

If the direction of the current of air, surrounding the cup, is at an angle of forty-five degrees, more or less, with the cup's axis of rotation, the atomized oil will be deflected to a less extent and a saucer-like flame will be produced.

From the foregoing, it is quite apparent that any form of flame, from the *flat* flame to the *straight-shot* flame can be produced by *merely varying the direction and force of the air current* surrounding the centrifugal atomizing cup.

The desirability of producing a particular form of flame is dependant upon the manner in which the rotary burner is desired to be used.

When the rotary burner is to be located within the fire-box, near the center thereof and beneath the boiler, it is quite obvious that a saucer-like *horizontal* flame is desirable as being the only practical form of flame which will spread out in all directions and upwardly beneath the boiler. To secure such a saucer-like *horizontal* flame, it is necessary to rotate the centrifugal atomizing cup in a horizontal plane and thus discharge the oil in a horizontal plane and to so direct the current of air that it will only slightly deflect the sheet of oil in an upward direction. To so rotate the cup, it is necessary to mount it on a

vertical shaft. This type of burner is referred to as the vertical rotary type of burner.

When the rotary burner is to be located mainly outside the fire-box, with the atomizing cup and air nozzle projecting through the wall at one end of the fire-box, it is quite obvious that a straight-shot flame is desirable as being the only practical form of flame which can be projected throughout the length of the fire-box beneath the boiler. To secure such a straight-shot flame it is necessary to rotate the centrifugal atomizing cup in a horizontal plane and thus discharge the oil in a vertical plane from which it is deflected by the horizontal annular current of air surrounding the cup. To so rotate the cup it is necessary to mount it on a horizontal shaft. This type of burner is referred to as the horizontal rotary type of burner.

Centrifugal Cup is Atomizing Means in Rotary Cup Burner

In the straight-shot prior art burners, wherein a steam blast or air blast is *alone* relied on to atomize the oil, it is necessary to use 25 to 30 pounds of steam or air pressure to perform such function.

In the centrifugal cup type of burner, the oil is atomized by being thrown from the periphery of the cup by centrifugal force. For this reason, the

patentee Ray designates such cup a "rotary atomizer." In his first patent, Ray says at line 12, page 1:

> "It is an object of this invention to provide in one complete unit a rotary *atomizer,* an air pump and a motor with but one moving component; and particularly to provide an oil burner whereby a quantity of crude oil is atomized and *then* directed in a substantially lineal or axial direction; . . ."

It will be noted Ray states the crude oil is first *atomized* and *then* such atomized oil is directed in an axial direction. To so direct the atomized oil in an axial direction, the annular current of air is provided. As such current of air is not relied on to atomize the oil but merely to change the direction thereof, it is only necessary to use a pressure as low as 3 ounces.

The fact that an air pressure of only 3 ounces is used in the centrifugal atomizing cup type of burner, whereas a steam pressure or air pressure of 25 to 30 pounds is required in the straight-shot type of burner, wherein no mechanical means are used to atomize the oil, conclusively demonstrates that the centrifugal cup is the atomizing means in the rotary cup type of burner.

Reference to this obvious fact is made because of the labored effort of opposing counsel to convince the Court that the mode of operation of the Ray device differs from the mode of operation of prior art centrifugal cup burners.

In all these centrifugal cup burners, the rotary cup

is the atomizing means and the annular current of air is the means of directing the atomized oil into or throughout the furnace. The direction and force of the air current merely determines the direction and form of the flame, which can be varied at will by merely varying such direction and force of the annular air current. There is nothing mysterious or abstruse in the foregoing situation and the respective actions and effects of the centrifugal cups and of the air currents in these types of burners were quite obvious from the very beginning of the art.

Variations in Sizes of Parts According to Variations in Capacities and in Amount of Work to Be Done

As in the case of steam engines, gasoline engines, electric motors, et cetera, the size and capacity of rotary oil burners are varied according to the amount of work to be performed. In a large sized burner, as compared with a smaller burner, more oil is burned and, therefore, in such a burner, the cup is larger, the quantity and pressure of the air are increased to deflect the larger quantity of atomized oil, the dimensions of the fan are increased to create the increased quantity and pressure of air required and the size of the electric motor is increased in order to rotate the larger cup and fan.

In so increasing the size of the electric motor, it is quite obvious no invention is required. The engi-

neer, by merely using his engineering knowledge, figures what horse-power is necessary to operate the device and specifies that an electric motor of a certain horse-power be employed in the device.

The engineer also figures what air volume and pressure must be used to deflect the atomized oil to the desired extent to produce the desired form of flame and then, by merely exercising his engineering skill, figures the dimensions of a fan capable of delivering such air current.

Design of Fan Mere Engineering Problem

The factors, which control the design of a fan, are matters of general engineering knowledge and skill and have been known from a time long antedating any matters in controversy in this suit. As the expert witness and engineer, DeLaney, said:

> "Q. What factors control a design of a fan for getting certain results with regard to taking care of a certain volume of air having certain pressure? . . .
>
> A. In building a fan for a specific purpose, knowing the desired pressure of air that you wish to carry, the pressure of air will give you the diameter of your fan. The volume of air that you want will be controlled by the width of the fan.
>
> Q. What would be the proper design of a fan where you wished to take care of a small volume of air at a relatively high pressure?
>
> A. Your runner would be wide enough to carry the necessary volume and the diameter to give you

the necessary pressure. For a small volume it would be a comparatively narrow runner.

Q. State whether or not the fan which you find embodied in the defendant's device is designed in accordance with what you have just stated to be the factors entering into the design of a fan to take care of the amount of air which would discharge from the air nozzle in the defendant's device?

A. Yes, it would; it would give you a relatively high pressure for a small discharge opening.

Q. For what length of time, to your knowledge, have fans been so designed in order to take care of varying volumes and pressures of air as indicated by you?

A. I would have to go back a long, long ways into various books which I have read on fan construction over a period of possibly twenty years.

Q. How many?

A. Twenty." (R. 96.)

Regarding the variation in the sizes of fans used, the witness DeLaney said:

"A. In the defendant's type of burner there are several sizes; each size carries a certain diameter fan, which gives a certain pressure and volume.

MR. WHITE—Q. Why is it necessary in the defendant's device to vary the size of the fan and in this way vary the pressure of the air discharged from the air nozzle?

A. Because the smaller sizes of the unit are for small consumption of oil, and the larger sizes for a larger consumption of oil, and the air current or pressure is in proportion to the volume of oil.

Q. In other words, then, it requires a greater pressure to take care of a greater volume of oil

discharged from the distributing cup. Is that correct?

A. It is.

Q. Can you give the pressure under which the air is discharged from the air nozzle in the defendant's apparatus, Plaintiff's Exhibit 1?

A. No, I cannot.

Q. Can you give it approximately?

A. Approximately about 3 ounces.

Q. Is that a high or low pressure? A. Low.

THE COURT—Q. What do you mean by '3 ounces'—in proportion to what?

A. 3 ounces static pressure.

Q. Even that does not make it clear to a layman.

A. 3 ounces per square inch.

Q. Atmospheric pressure itself is what?

A. 14.6 pounds.

MR. WHITE—Q. Compare that pressure utilized in defendant's apparatus, Plaintiff's Exhibit 1, with the pressures used in other types of oil burners on the market, and of a higher pressure?

MR. TOWNSEND—As to comparison with rotary burners, your Honor, they are of no consequence.

THE COURT—Proceed and answer the question.

A. If you take the type of a burner in which the air pressure only is the atomizing means of your oil, it is customary to use 25 or 30 pounds of air pressure.

Q. Now let me understand you right here. I am more familiar with steam than with air. Do you mean that if you had a gage on the defendant's device the pressure indicated on the gage would be 3 ounces?

A. Yes, sir.

Q. That would be rather small.

A. Yes, sir. In other types, other than the mechanical atomizing types, your air is the atomizing medium, while in Exhibit 1 you are using the rotary force for atomizing the oil, assisted by the projection of the air current, which is much less than the straight air-atomizing burner.

MR. WHITE—What is the principal function performed by the current of air issuing from the air nozzle in the defendant's device, or in the plaintiff's device, as illustrated in these two exhibits before you, Exhibits 1 and 7?

* * * * * *

MR. WHITE—Please state the chief function.

A. The chief function of the air current in these two types of burners here is for the changing of the current or direction of the oil current from that of right angles to the shaft or axis to parallel to the shaft, or projecting forward." (R. 89.)

Form of Flame Controlled By Direction and Force of Air Current

In respect to varying the form or shape of the flame by merely varying the direction and force of the air current, Mr. DeLaney said:

"Q. What would be the type of flame in connection with this Fesler burner, what would be the form?

A. It might be described as being saucer-shaped.

Q. For what reason would it be so shaped; in other words, what is there in the device of Fesler that would give the flame that saucer shape?

A. The fact that Fesler uses a rotating head for atomizing the oil, and that the current of air

supplied by the fan which is housed in the burner head delivers the oil parallel to the oil, delivers the air parallel to the oil current, it gives you the saucer-shaped fire.

Q. To get the cylindrical-shaped flame of this device here of plaintiff and defendant it is necessary, as I understand it, to discharge it at right angles to the oil discharged from the periphery of the cup. Is that correct?

A. Yes.

Q. So that in any of these burners you can vary the form of the flame by varying the angle at which the air discharges around the periphery of the centrifugal cup. Is that correct?

A. Yes, it is." (R. 101.)

To create the straight-shot flame parallel to the cup's horizontal axis of rotation, it is but necessary to direct the air current parallel to such axis and thus cause it to deflect the atomized oil to a direction parallel with the axis. When the atomized oil is so directed into the furnace parallel to cup's horizontal axis, it has the form of flame of the old, prior art straight-shot burner employing only a blast of steam or of air to atomize the oil.

As an example of such *straight-shot* form of flame produced in the centrifugal cup type of burner, the witness DeLaney referred to the prior art Klein rotary cup burner disclosed in the Klein patent issued April 26, 1892, about twenty years prior to Mr. Ray's advent in this art.

In other words, Klein, as early as 1892, disclosed to the public a centrifugal cup burner in which the

atomized oil was deflected by the air current to a direction parallel with the cup's horizontal axis of rotation, with the result of producing the horizontal straight-shot form of flame. In this Klein patent of 1892, the patentee says:

> "The distributor D will be propelled with great rapidity and the oil or other fluid to be atomized will be thrown from its mouth in a line at or about right angles to its axis *and would impinge against the walls of the nozzle of the shell A were it not met by a counteracting current of air rushing through said nozzle, which deflects the oil,* and the two fluids become thoroughly mixed."

Fig. 4 of this Klein patent discloses a burner comprising the centrifugal atomizing cup D mounted on the horizontal shaft C, on which is mounted the fan C for creating the current of air which discharges through the restricted annular air outlet between the nozzle A and cup D and thus deflects the atomized oil to a direction parallel with the cup's axis of rotation. Regarding the Klein rotary burner, the witness DeLaney said:

> "Q. I refer you now to the Klein patent and ask you to describe the features disclosed therein.
>
> A. In this Klein patent is illustrated the mechanical or rotary force, the mechanical atomization of your oil, the oil being fed through a hollow shaft, the shaft carrying the atomizing cup; also carrying a fan for propelling air at the discharge area of the nozzle.
>
> Q. What have you to say in regard to the area of that discharge opening of the air nozzle, rela-

tive to the amount of air that would be discharged there-through, and the force or pressure of such air?

A. The area of discharge is very much smaller; that is, you have a *restricted area* at the discharge nozzle in comparison to the chamber between the fan and the nozzle.

Q. With what pressure is the air discharged from this Klein nozzle, according to the disclosure of this Klein patent?

A. It creates a pressure that is sufficient to keep the oil, that is, the atomized oil, or the oil leaving the atomizing cup from striking the edge of the nozzle which is adjacent to the periphery of the cup.

Q. And in this Klein structure, the periphery of the oil-distributing cup is within the outlet opening of the air nozzle. Is that correct?

A. It is.

Q. And the air is discharged with such force as to prevent the oil thrown off from the periphery of the cup from striking the inner surface of that air outlet opening. Is that right?

A. Yes.

MR. TOWNSEND—If your Honor please, that is objected to as leading, and I don't think it is supported by the disclosure in the patent.

THE COURT—It is leading.

MR. WHITE—I am trying to cover the ground quickly, your Honor. *That statement is in the patent.*

THE COURT—That statement is in the patent?

MR. WHITE—*Yes, your Honor.*

THE COURT—*I should imagine that would be the effect there anyhow if it had air enough—or, rather, I should conclude that. I think perhaps we all know that.*

MR. WHITE—Q. What would be the effect

of such discharge of air in this Klein device with respect to modifying the direction of the flow of the current of oil discharged from the periphery of the oil cup?

A. The discharge of the oil from the atomizing cup without the current of air would be at right angles to the axis. *The current of air there would change the oil from right angles to the axis to parallel to the axis."* (R. 87.)

From the foregoing, it is apparent that, long prior to Ray's appearance in this art, it was well known and appreciated and was obvious that the form of flame, produced in a centrifugal cup burner, could be and would be and actually was varied, according to the direction and force of the air current, from the flat flame, through the various forms of saucer-shaped flames to the straight-shot flame. Furthermore, it is quite obvious from an inspection of the prior art, to be hereinafter discussed, that the selection of the particular form of flame was controlled by the conditions under which the burner was intended to be used. In respect to the burners located mainly outside the fire-box and with only the air nozzle and rotary cup projecting through the end wall of the fire-box, the straight-shot form of flame was obviously the preferable type. In respect to burners located within the fire-box and near the center thereof, the saucer-like flame was obviously the preferable type. However, in respect to mode of operation, there is no difference between these two types of centrifugal cup burners.

In both types, the centrifugal cup atomizes the oil and the direction and force of the air current controls the form of flame.

Arrangement and Location of Several Instrumentalities Comprising Rotary Cup Burner

As stated before, the centrifugal or rotary cup type of burner necessarily comprises the following instrumentalities:

(1) Some form or species of rotary cup;

(2) Some form or species of motor means for rotating the cup;

(3) Some form or species of means for creating the air current for discharge about the periphery of the cup; and

(4) Some form or species of means for conducting oil to the bottom of the cup.

It is quite apparent that each of the foregoing elements of such a type of burner is in and by itself a complete, separate and distinct instrumentality or machine capable of performing its own separate and distinct function according to its own mode of operation and unaffected by the specific or particular characteristics and features of the other instrumentalities.

Electric Motor

The Ray patents disclose, as means for rotating the cup, an electric motor, but no attempt is made to describe the particular construction or characteristics of any particular type or make of electric motor. If Ray had followed the course pursued by him in describing the conventional details and characteristics of an ordinary and well-known type of fan, to wit, a centrifugal fan, he would have described all the details of some particular type of electric motor and incorporated all said details as separate elements in his claims. Such a course, in respect to the electric motor, could obviously have no justification, as it is apparent it is quite immaterial, so far as the operation of the burner is concerned, whether a General Electric or Westinghouse or any other make of motor, or any other type of motor means, is used, provided it delivers the horsepower necessary to do the required work.

It is also obvious that, so far as concerns the operation of the complete burner, it is quite immaterial whether such electric motor or other type of motor, be mounted on the same shaft on which the rotary cup is mounted or whether such motor be located at a distance and power therefrom transmitted by a belt to a pulley on the shaft on which the rotary cup is mounted. In either location the burner, as a whole, would operate in precisely the same way. In other words, the location of the electric motor or other type

of motor, relative to the other elements of the complete burner, is merely a matter of machine design. In the prior art devices, we find the motor means sometimes mounted on the shaft on which the cup is mounted and sometimes located elsewhere and power therefrom transmitted to the rotary cup shaft. In the prior art devices, we find different types of motors used and including electric motors, water turbines and air turbines for rotating the cup shaft. The selection of the particular type of motor is a mere matter of engineering discretion and judgment although, in view of the development of the electric motor, that type is generally selected for obvious reasons, prompting its general use in most of the mechanical arts.

Centrifugal Fan

The Ray patents disclose a well-known type of fan, to wit, the centrifugal type in which the air is discharged centrifugally at the periphery of the fan from the ends of the fan blades. This type of fan, as well as the propulsion type of fan, are found in the prior art devices, wherein they are both used to create the air current.

The centrifugal type of fan is in and by itself a complete instrumentality or machine embracing certain features and details of construction and operating and functioning in accordance with its own mode of operation. Such type of fan is capable of use in a great variety of mechanical environments and its

selection for use in connection with any other particular devices or apparatus is merely a matter of engineering judgment and discretion. Such type of fan was a well-known device and on the market long prior to Ray's appearance in the oil burner art and, prior to his said appearance, its characteristics, advantages and mode of operation were well known.

The "diaphragm," so frequently referred to in opposing counsel's brief and, in the first Ray patent, referred to as the "partition 3," is nothing more than one side of the fan casing. In other words, due to the centrifugal discharge of the air from the ends of the fan blades, such blades, in a centrifugal fan, revolve in a casing having stationary sides enclosing the revolving blades. Precisely the same construction of centrifugal fan and "diaphragm" or casing side are disclosed in the 1895 Mack patent covering an oil burner. The same conventional and well-known construction of a centrifugal fan is disclosed in the 1911 Harker patent. The Harker centrifugal fan comprises the fan blades 63 revolving in a casing, one stationary side of which is the partition or disk 68. Just as in the conventional centrifugal fan illustrated in the Ray patents, the air is discharged from the ends of the blades in the Harker fan and flows over the partition or diaphragm 68 into the adjacent enclosed space (corresponding to the Ray space 6 of his first patent), and then flows inwardly towards the shaft where it discharges through an opening surrounding the shaft,

precisely as it discharges from said space in the first Ray patented device.

As the witness DeLaney said, the factors controlling the design of a fan are the volume of air and the pressure of air required to do the desired work. The *volume* of air capable of being handled by the fan is dependent upon the width of the fan blades. The *pressure* of the air is dependent upon the length of the blades. On this point he said:

> "A. In building a fan for a specific purpose, knowing the desired *pressure* of air that you wish to carry, the *pressure* of air will give you the *diameter of your fan.* The *volume* of air that you want will be controlled by the *width of the fan.*" (R. 97.)

It will be noted that Ray, in his first patent claims, attempts to monopolize the use of a centrifugal fan in oil burners when so designed, according to old and well-known engineering principles, to deliver the current of air required to divert the centrifugally discharged oil and project it into the furnace. In other words, in many of said claims he describes the prior well-known centrifugal type of fan of the necessary diameter and having the proper width of blades to deliver the required volume of air at the necessary pressure to divert, in the old prior art manner, the atomized oil and produce the prior well-known straight-shot form of flame.

It is, of course, obvious that no patentee is entitled

to monopolize prior well-known engineering principles controlling the proper design of a prior well-known instrumentality in adapting it to do more or less work in accordance with its old mode of operation.

It may be well to refer, at this point, to the fact that patent drawings are not made to scale. Patents are addressed to those skilled in the art and one, attempting to practice the invention disclosed in a patent, is required to exercise the necessary mechanical and engineering skill required to so practice the invention. In other words, when a patentee states or discloses that a small volume of air, issuing from a restricted annular opening surrounding a rotary oil cup, diverts the oil into a direction parallel with the cup's axis of rotation and illustrates a fan for producing such current of air, it is unnecessary for the patentee to show or state what the exact dimensions of such fan must be in order to provide such current of air under a pressure sufficient to produce that result. The factors controlling the design of such a fan are well known and were well known long prior to Ray's appearance in the oil burning art.

When a patentee discloses an electric motor for actuating his patented device, it is unnecessary for him to disclose the proportions and dimensions of the parts thereof in order to adapt such motor to do the required work. Those are merely engineering prob-

lems, to be solved by the application of well-known engineering principles.

As said in the case of *Crown Cork & Seal Co.* of *Baltimore City* vs. *Aluminum Stopper Co.,* by the Circuit Court of Appeals for the Fourth Circuit; 108 Fed., 845, 849:

> "The object of the drawings filed in the Patent Office is attained if they clearly exhibit the principles involved, and, in a case like this, rigid adherence to the dimensions thus exhibited is not required or expected and, if an intelligent mechanic would so proportion the dimensions as to secure practical results, inutility is not demonstrated by experiments with material identical in form and proportion of parts with the drawings in the patent."

As in the case of the electric motor, it is quite immaterial, in respect to operation of the burner, whether the fan be located on the same shaft on which the rotating cup is mounted or on which the motor is mounted. If the fan be located at a distance from the cup and the air therefrom conveyed by a pipe to the air nozzle surrounding the cup, the burner, as a whole, will operate in a manner precisely the same as it operates when the fan, cup and motor are all mounted on the same shaft. The relative locations of these separate and distinct instrumentalities is a mere matter of machine design. In the prior art burners, we find these three devices, to wit, motor, fan and cup, sometimes mounted on the same shaft and sometimes otherwise located.

Centrifugal Atomizing Cup

The first Ray patent discloses one form or species of rotary cup. The second Ray patent discloses another form or species of rotary cup.

The cup, disclosed in the first Ray patent, is, in construction, the same as the rotary cup designed and used in 1911 by Messrs. King and Becker who, at that time, were associated with defendant's predecessor in interest, the American Heat & Power Co. of Oakland, California. This type of cup is disclosed in the drawing, dated August 3, 1911, and marked "Defendant's Exhibit EE, King-Becker drawing." (R. 142.) The original King-Becker 1911 cup is also in evidence as "Defendant's Exhibit FF, King -Becker 1911 device." (R. 144.) The same type of cup is also disclosed in some of the prior art patents and the construction thereof will be hereinafter referred to.

Only 24 burners were ever made by the plaintiffs and embodying the species of cup disclosed in the first Ray patent. As said by plaintiff Ray:

> "MR. WHITE—Q. How many burners did you or your company make embodying the type of cup disclosed in the first patent in suit, No. 1,193,819, and which cup has the rearwardly projecting flange?
>
> * * * * * *
>
> A. As near as I can remember, about 24." (R. 184.)

In other oil burners made by plaintiffs, the species of cup, disclosed in the second Ray patent, was employed. (R. 185.)

In the defendant's device involved herein, the King-Becker type of cup, appropriated by Mr. Ray and disclosed in his first patent, is embodied.

The defendant is charged with infringing both these Ray patents, notwithstanding they respectively disclose and claim two different species of rotary cups. In other words, plaintiffs contend a change in the species of cup used does not change the mode of operation of the burner as a whole. This is true not only in respect to the particular species of cups used but also in respect to the particular species of motors, fans and means for conducting oil to the cup. In other words, the foregoing demonstrates that the Ray burners are merely aggregations of old elements, each operating in its own way and unaffected by the particular species of the other necessary means required to make up the complete burner.

The fact that two different species or types of rotary cups are respectively disclosed in the two Ray patents and that defendant uses that species disclosed in the first Ray patent and designed by King and Becker as early as 1911, affords an opportunity of applying the principles followed by the lower Court in adjudging these two Ray patents void for want of invention.

For the purpose only of illustrating our point, we

shall assume that these two Ray patents respectively disclosed, when issued, novel combinations and that thereafter, defendant, in constructing its device, selected from the first Ray patent the particular species of cup disclosed in such patent and aggregated the same with the elements disclosed in the second Ray patent, with the exception of the cup disclosed in such patent. Could such substitution of the cup of the first Ray patent for the cup in the second Ray patented aggregation of elements be deemed an invention? Obviously not, and the law is well established that such a selection of elements and the substitution of one equivalent for another does not amount to invention.

As said by the Circuit Court of Appeals for the Sixth Circuit in the case of *General Manifold & Printing Co.* vs. *Simple Account Sales Book Co.,* 246 Fed., 125, 126:

> "From neither point of view did he do more than to take an existing combination and substitute for one element thereof a known equivalent. This is not invention. *Keene* vs. *New Idea Co.* (C. C. A. 6), 231 Fed., 701, 145 C. C. A. 587; *Fare Register Co.* vs. *Ohmer Co.* (C. C. A. 6), 238 Fed., 182, 151 C. C. A. 258; *Budd Co.* vs. *New England Co.* (C. C. A. 6), 240 Fed., 415, 153 C. C. A. 341, and cases cited in each."

To the same effect are the words of Judge Manton

in the case of *Le Roy* vs. *Nicholas Power Co.,* 244 Fed., 955, 958, 959, wherein he said:

> "The cases are uniform in holding that there is no invention in merely selecting and fitting together the most desirable parts of different machines in the same art, if each operates the same in the new machine as it did in the old and effects the same result. In view of this condition of the prior art, I am of the opinion that the claim of the defendant that LeRoy's patent is anticipated by the art, and is therefore void of invention, is well founded."

In the case of *Butler Bros.* vs. *Pratt,* 253 Fed., 654, 656, the Circuit Court of Appeals for the Eighth Circuit said:

> "As settled by many cases, it is not invention to substitute for one element in an article of manufacture another, which performs the same functions in substantially the same way and accomplishes substantially the same effect. *Railroad Supply Co.* vs. *Elyria Iron & Steel Co.,* 244 U. S. 285, 37 Sup. Ct. 502, 61 L. Ed. 1136; *Smith* vs. *Nichols,* 21 Wall. 112, 22 L. Ed. 566; *Reckendorfer* vs. *Faber,* 92 U. S. 347, 23 L. Ed. 719; *Van Epps* vs. *United Box Board & Paper Co.,* 143 Fed., 869, 75 C. C. A. 77; Walker on Patents (5th Ed.) §36."

As the prior art in evidence discloses, Ray did not invent any new combination, all he did was to select the most desirable parts of old devices and aggregate them together in the same old way to perform the same old functions.

Mounting or Support of Burner Relative to Furnace

We have referred to the prior art burners designed for location within the fire-box near the center thereof and embracing the vertical shaft for rotating the atomizing cup in a horizontal plane and so directing the current of air as to produce the saucer-shaped flame.

Other prior art burners are disclosed for location outside the fire-box and having only the rotary cup and surrounding air nozzle projecting through an opening in the furnace wall. In these burners the cup is mounted on a horizontal shaft and the air current so directed as to form the horizontal straight-shot flame.

It will be noted that the prior art burners are supported and mounted, relative to the furnace wall, in various ways. One type is permanently attached to a plate surrounding the wall opening through which projects the air nozzle and atomizing cup. Another type is mounted on a door hinged to the furnace wall. Still another type is hinged to the furnace wall and a part of the oil burner forms the closure for the opening in the wall.

Means for Supplying Oil to Burner and Returning Excess Oil to Supply Source

The first Ray patent discloses the burner hinged to the furnace wall. It will be noted that, in this patent, no means are shown or described for conveying the oil from the source of supply to the burner and no oil pump is shown. Presumably, some form of *flexible* conduit would be used to so convey the oil to the hinged burner. In fact, Ray states that, in his first burner, he used such "*flexible* oil connection to make the connection to the oil feed valve." (R. 176.) It will also be noted that no means are shown in the first Ray patent for returning to the source of supply any excess oil.

In the burner of the second Ray patent, the oil is delivered to the hinged burner by a pipe, a section of which forms one of the hinge pintles and the excess oil is returned from the burner to the source of supply by another pipe, a section of which forms the other hinged pintle. By so utilizing portions of the oil pipes as hinge pintles, the necessity of using flexible oil conduits is eliminated.

The use of hollow-hinged pintles as portions of conduits for so conveying the oil to hinged burners, is disclosed in the prior art and such old means were merely appropriated by Ray and were not original with him.

The necessity for providing means to return the excess oil to the source of supply is due to the fact that the oil pump is directly connected to the motor and starts pumping as soon as the motor starts and continues pumping a certain quantity of oil regardless of the amount of oil permitted to flow through the pipe to the rotary cup, such flow to the cup being controlled and varied by a valve in such pipe. It is thus apparent that, at times, more oil is pumped than is permitted to flow to the cup and such surplus oil is returned to the source of supply. Such pumping and oil return system were not original with Ray, but were common practice in connection with the prior art oil burners.

As early as 1910 the Fess Company made and sold burners in San Francisco in connection with such an oil system and the same is disclosed in that company's catalog in evidence as "Defendant's Exhibit CC—Fess Company Catalog" (R. 106). As DeLaney said in respect to such 1910 Fess Company oil burner:

> "A. The equipment consisted of an electric motor to operate the burner, a main driving shaft, having a worm reduction gear, end gear, which operated a small oil pump; the shaft extended into a set of bevel gears which carried the power to the vertical shaft carrying the atomizing cup; the pump operating upon a constant speed motor naturally ran at a constant capacity of oil, the amount of oil that was taken over or used on the burner was taken from the pump, and the balance of the oil returned through a relief valve to the source of supply" (R. 105).

The same system of pumping the oil and returning the excess oil to the supply source was used by defendant's predecessor, the American Heat and Power Company, as early as 1913 (R. 107). That company's catalog disclosing such system is in evidence as "Defendant's Exhibit DD" (R. 107).

Regarding such an oil supply and return system, the witness Becker testified as follows:

> "Q. State what was the practice during the year 1911 with regard to these oil burners, in respect to having oil pumps operating therewith, and having a return oil conduit to the source of supply, to take care of the surplus oil.
>
> A. In 1911 it was the law of the fire marshal in San Francisco that he would not allow an installation unless you had a return flow of your oil through the pump; in other words, we used a motor and an oil pump which we by-passed to return the surplus of oil not used by the burner" (R. 155).

III.

Aggregation of Various Species of Instrumentalities Present in All Rotary Cup Burners

> "For example, it is not invention to take a fire pot from an old stove, a flue from another and a coal reservoir from a third and assemble them where each merely performs its old functions in its new location. *Hailes* vs. *Van Wormer,* 20 Wall. 353."
>
> *Turner* vs. *Moore,* 211 Fed. 466, 467 (C. C. A., 8th C.).

The centrifugal or rotary atomizing cup burner necessarily embodies some form of atomizing cup plus some form of means for rotating the cup, plus some form of means for creating the current of air for discharge around the periphery of the cup, plus some form of means for feeding oil to the cup.

The said four different means respectively perform four different functions and each of said means is in and by itself a complete unit or instrumentality performing its own individual function according to its own individual mode of operation.

We can assume that the whole prior art in evidence was a store to which all those working in this art had access at all times and that on the shelves of such store were displayed all the various and sundry prior art types of atomizing cups, all the various and sundry prior art types of motor means for rotating the cups, all the various and sundry prior art types of

fans, and all the various and sundry prior art types of oil-feeding means, respectively utilized in the prior art oil burners, and we can also assume that Mr. Ray, before making his selection of the particular types of cups, of the particular type of electric motor, of the particular type of fan, and of the particular type of oil-feeding means respectively disclosed in the Ray patents in suit, went into such store and there saw on display all said types of said various means.

The foregoing assumption is justified by a conclusive presumption of law announced as follows by the Supreme Court in the case of *Mast, Foos & Co.* vs. *Stover Manufacturing Company,* 177 U. S. 485, 493:

> "Having all these various devices before him, and whatever the facts may have been, *he is chargeable with a knowledge of all pre-existing devices,* did it involve an exercise of the inventive faculty to employ the same combination in a windmill for the purpose of converting a rotary into a reciprocating motion?"

Did it involve, on the part of Ray, any exercise of the inventive faculty to merely select, from the various types of motors on the shelves of such prior art store, an electric motor instead of a water turbine motor? To select a centrifugal fan of the proper dimensions to do the required work, instead of one of insufficient or of too great capacity? To select the King-Becker 1911 type of atomizing cup? To select the oil pump feed and excess oil return system used

by defendant's predecessor, *American Heat & Power Co.*, in 1911?

Having made such selection of atomizing cup, motor, fan and oil-feed means, did it require any invention by Ray to aggregate said instrumentalities and hinge the aggregation to a plate on the furnace wall adjacent an opening therein, in the same manner that oil burners had long prior been hinged to a plate on the furnace wall adjacent an opening therein and which opening, like Ray's, was lined with a conical metal plate?

Having so hinged his aggregation of cup, motor and fan, to the furnace wall, did it require any invention by Ray to use the prior art method of conducting the oil to and from the burner by the use of hollow-hinge pintles?

It would seem quite apparent that one would not be making any invention in this art by simply substituting in any one of the burners disclosed in the record, a different type of old motor, or a different type of old cup, or a different type of old fan, or a different type of old oil-feed means. It also would seem apparent that one would not be making an invention to simply hinge any one of said burners to the furnace wall and which burner was shown permanently attached to such wall. If this were not true, one could make an invention every time he suggested hinging to the furnace wall one of the prior art burners illustrated as not so hinged. As early as 1868 the pat-

entee Cook fully appreciated any burner could be either permanently attached to the furnace wall or be hingedly connected thereto. In his 1868 patent, "Defendant's Exhibit B" (R. 79), Cook says that his rotary cup "can be attached in any position at any convenient place, such as the furnace door. . . ."

The fact that the Ray devices are mere aggregations of separate instrumentalities respectively operating according to their own modes of operation and that the mode of operation of the complete burner is not changed by substituting, for one of said instrumentalities, a different species, is demonstrated by plaintiffs' own expert witness Whaley, who testified as follows:

> "MR. WHITE—Q. In each of these devices which you have described, do you find a rotating oil cup, plus means for rotating that cup, plus means for creating a current of air for discharge about the periphery of that cup, plus means for getting oil into the cup?
>
> A. In the two machines that I have described that is correct.
>
> * * * * * * *
>
> Q. In the defendant's device, do you find an oil cup the same in design as the oil cup in plaintiff's device that you have described, and if not, what is the difference between the two oil cups?
>
> A. The oil cup in plaintiff's Exhibit 7 differs in that the oil is brought into the cup centrally in the back end of the cup; in the plaintiff's Exhibit 1 the oil is introduced off center into a flange in the rear side of the cup.
>
> Q. In other words, in the plaintiff's device you

have the oil cup joined to the end of the hollow shaft, through which hollow shaft extends a stationary oil pipe for feeding oil into the cup. Is that correct?

A. That is correct.

Q. In the defendant's device you find an oil cup having a central partition with a rearwardly projecting flange, and the partition being joined to the end of the shaft, and there being a stationary oil pipe for delivering the oil into that rearwardly projecting flange and from there going into the front chamber for discharge?

A. That is correct.

Q. In the defendant's device the shaft is solid; there is no oil passed through the shaft. Is that correct?

A. That is correct.

Q. You have said that the mode of operation of the two devices is identical in respect to atomization of the oil; that is true, notwithstanding that in plaintiff's device you have one specific type of oil cup and one specific type of feeding oil to that cup, and in the defendant's device you have another species of oil cup and another species of delivering oil to that cup. Is that correct?

A. The delivery of the oil to the cup has nothing to do with the atomization of the oil.

THE COURT—Answer the question. Read the question.

(Last question repeated by the reporter.)

A. That is true; the method of atomizing the oil is the same in each.

Q. Is the action of the fan in the plaintiff's device any different by reason of being associated therein with a particular species of oil cup and a particular species of means for getting oil into that cup in respect to the fan action of the defendant's device, which is combined with a different species

of oil cup and a different species of oil feed to the cup?

A. No.

Q. In other words, in these two devices, notwithstanding the differences in respect to the two oil cups and the two means for feeding oil into those cups, the fans operate in the same way in accordance with their own law or mode of operation. Is that correct?

A. That is correct.

Q. Is that true in regard to the electrical motors in these two devices—that is, they operate precisely in the same way, notwithstanding the fact that in the plaintiff's device one motor is associated with this particular species of cup and oil feed, and in the defendant's device the motor is associated with another species of oil cup, and another species of oil feed? Is that correct?

A. The mode of operation is the same, yes." (R. 71.)

The witness Ray testified to the same effect as follows:

"Q. As I understand you, whether you used in your burner Exhibit 7 this type of burner head shown in the second patent or the type of burner head shown in the first patent, no different result is effected?

A. As far as the combustion is concerned, no.

Q. The mode of operation of the two devices is the same whether you have one type of burner in there or the other?

A. As a matter of introducing the oil, it is immaterial so far as combustion is concerned." (R. 186.)

On this same question of aggregation, the witness Delaney testified as follows:

"Q. State whether or not any difference in mode of operation results from the fact that in the exhibit here of the plaintiff's commercial oil burner, there is an oil cup to which the oil is fed through a stationary oil conduit located in a hollow shaft, whereas, on the other hand, in this defendant's device we have another species of oil cup to which oil is delivered by a stationary pipe on the shaft.

* * * * * * *

A. There would be no difference.

Q. In other words, then, when you substitute in one of these oil burners for the particular species of oil distributing cup and oil feed means therein another species of oil cup and oil feeding means, you do not modify the mode of operation of the whole device which comprises a fan and a motor. Is that correct?

A. Yes.

Q. State whether or not in the operation of the defendant's device the mode of operation of that device as an oil burner would in any way be effected by the fact that instead of carrying the oil to the oil cup through conduits forming the hinge you carried the oil to the cup through a flexible conduit?

A. It would not.

MR. TOWNSEND—That is objected to as irrelevant. The defendants are doing that way and I cannot see that the inquiry is material.

THE COURT—I don't know just what your claims may cover. I can very readily see what his answer would be. I think any of us can see it would make no difference, but following the rule, the objection will be over-ruled, an exception noted, and it will be in the record; if not relevant or

material or competent it will be given no consideration.

MR. WHITE—In the operation of this defendant's device, what effect, if any, in its mode of operation would there be in hinging that device to a front plate on the furnace wall and having another plate distinct from this first plate form the lining for the furnace opening?

A. There would be none.

Q. Is there any co-operation between this furnace lining or this lining here for the furnace opening and the rest of the device operating as an oil burner?

A. No. (R. 108.)

Upon the proposition that no invention is involved in selecting old elements and features and aggregating them together, the case of *Keene* vs. *New Idea Spreader Co.*, 231 Fed., 709, is most pertinent. In that case the Circuit Court of Appeals for the Sixth Circuit said:

"Still, to insist that claims disclose invention or discovery where their substantial equivalency in elements, in mode of operation and results, plainly appear in two or more earlier patents or publications, though not all in one patent or publication, is to ignore the very terms of the patent act. Above all, counsel's theory is opposed to the settled course of judicial decision. As was said, in holding a claim to be void for want of invention, in *Dilg* vs. *George Borgfeldt & Co.*, 189 Fed., 588, 590, 110 C. C. A. 568, 570 (C. C. A. 2d Cir.):

'. . . Although all the elements of the claim may not be found in any one patent, it is clear that they are all to be found in different patents. No single patent may anticipate, but they all have

a bearing upon the question whether invention or mechanical skill was involved or required.'

Again, in *Duer* vs. *Corbin Cabinet Lock Co.,* 149 U. S. 216, at 222, 13 Sup. Ct. 850, at 853 (37 L. Ed. 707), when affirming a decree dismissing the bill in a patent suit, Mr. Justice Brown said:

'In view of the advance that had been made by prior inventors, it is difficult to see wherein Orum displayed anything more than the usual skill of a mechanic in the execution of his device. All that he claims as invention is found in one or more of the prior patents.'

And further (149 U. S. 223, 13 Sup. Ct. 853, 37 L. Ed. 707):

'In view of the fact that Mr. Orum had no actual knowledge of the Gory patent, he may rightfully claim the quality of invention in the conception of his own device, but as he is deemed in a legal point of view to have had this and all other prior patents before him, his title to invention rests upon modifications of these, too trivial to be the subject of serious consideration.'

So in *Florsheim* vs. *Schilling,* 137 U. S. 64, 11 Sup. Ct. 20, 34 L. Ed. 574, where alleged infringements of two separate patents were involved, an error was assigned to a finding of the circuit court that 'there was no novelty in complainants' invention, because one feature was found in one old patent, and another feature in another, and still another feature in a third patent, all of which constituted the subject matter of the claims in complainants' patent,' it was held (137 U. S. 72, 11 Sup. Ct. 23, 34 L. Ed. 574):

'We concur with the Circuit Court that all the claims in these patents, except the last two claims in No. 238,101, are invalid by reason of their long prior use as inventions secured by patents which

cover every feature described in those claims; and that the combination of these features in No. 238,100 is not a patentable invention.'

And in *Busell Trimmer Co.* vs. *Stevens,* 137 U. S. 423, 11 Sup. Ct. 150, 34 L. Ed. 719, when denying the contention that certain features in the Orcutt patent constituted 'patentable novelties, especially the combination of them into one device,' it was said (137 U. S. 433, 11 Sup. Ct. 153, 34 L. Ed. 719):

'We repeat that, in view of the previous state of the art, we think otherwise. The evidence, taken as a whole, shows that all of those claimed elements are to be found in various prior patents—some in one patent, and some in another, but all performing like functions in well-known inventions having the same object as the Orcutt patent, and that there is no substantial difference between the Brown metal cutter and Orcutt's cutter, except in the configuration of their molded surfaces. That difference, to our minds, is not a patentable difference, even though the one cutter was used in the metal art, and the other in the leather art. A combination of old elements, such as are found in the patented device in suit, does not constitute a patentable invention.'

See, also, decisions of this court before cited: *Overweight Counterbalance El. Co.* vs. *Henry Vogt Mach. Co.,* 102 Fed., at page 961, 43 C. C. A. 80; *American Carriage Co.* vs. *Wyeth,* 139 Fed., at page 391, 71 C. C. A. 485."

As all of the elements of the Ray apparatus are borrowed from prior devices *in the same art* used to perform the same functions in the same way, the remarks of the Supreme Court in *Specialty Mfg. Co.*

vs. *Fenton Mfg. Co.,* 174 U. S. 492, are particularly pertinent:

> "Putting the Hoffman patent in its most favorable light, it is very little, if anything, more than an aggregation of prior well-known devices, each constituent of which aggregation performs its own appropriate function in the old way. Where a combination of old devices produces a new result such combination is doubtless patentable, but where the combination is not only of old elements but of old results, and no new function is evolved from such combination, it falls within the rulings of this court in *Hailes* vs. *Van Wormer,* 20 Wall. 353-368; *Reckendorfer* vs. *Faber,* 92 U. S. 347, 356; *Philips* vs. *Detroit,* 111 U. S. 604; *Brinkerhof* vs. Aloe, 146 U. S. 515, 517; *Palmer* vs. *Corning,* 156 U. S. 342, 345; *Richards* vs. *Chase Elevator Co.,* 158 U. S. 299. Hoffman may have succeeded in producing a shelf more convenient and more salable than any which preceded it, but he has done it principally, if not wholly, by the exercise of mechanical skill."

As Judge Hook said, in speaking for the Circuit Court of Appeals in the case of *Sloan Filter Co.* vs. *Portland Gold Mining Co.,* 139 Fed., 23:

> "The result of the application of the common skill and experience of a mechanic, which comes from the habitual and intelligent practice of his calling, to the correction of some slight defect in a machine or combination, *or to a new arrangement or grouping of its parts,* tending to make it more effective for the accomplishment of the object for which it was designed, not involving a substantial discovery, nor constituting an addition to our knowledge of the art, is not within the pro-

tection of the patent laws. *Gates Iron Works* vs. *Fraser,* 153 U. S. 332, 14 Sup. Ct. 883, 38 L. Ed. 734; *Florsheim* vs. *Schilling,* 137 U. S. 64, 11 Sup. Ct. 20, 34 L. Ed. 574; *Hollister* vs. *Benedict Mfg. Co.,* 113 U. S. 59, 5 Sup. Ct. 717, 28 L. Ed. 901; *Atlantic Works* vs. *Brady,* 107 U. S. 192, 2 Sup. Ct. 225, 27 L. Ed. 438; *Dunbar* vs. *Meyers,* 94 U. S. 187, 24 L. Ed. 34; *Hotchkiss* vs. *Greenwood,* 11 How. 267, 13 L. Ed. 683; *Adams Electric Ry. Co.* vs. *Lindell Ry. Co.,* 77 Fed., 432, 23 C. C. A. 223; *Tiemann* vs. *Kraats,* 85 Fed. 437, 29 C. C. A. 257.

'The mere use of known equivalents for some of the elements of prior structures; the substitution for one material of another known to possess the same qualities, though not to the same degree; the mere carrying forward or more extended application of the original idea, involving a change only in form, proportions or degree, and resulting in the doing of the same work in the same way and by substantially the same means—is not patentable, even though better results are secured; and this is the case, although what preceded rests alone in public knowledge and use, and not upon a patent. *Market St. Cable Ry. Co.* vs. *Rowley,* 155 U. S. 621, 15 Sup. Ct. 224, 39 L. Ed. 284; *Wright* vs. *Yuengling,* 155 U. S. 47, 15 Sup. Ct. 1, 39 L. Ed. 64; *Adams* vs. *Stamping Co.,* 141 U. S. 539, 12 Sup. Ct. 66, 35 L. Ed. 849; *Burt* vs. *Evory,* 133 U. S. 349, 10 Sup. Ct. 394, 33 L. Ed. 647; *Brown* vs. *Dist. of Columbia,* 130 U. S. 87, 9 Sup. Ct. 437, 32 L. Ed. 863; *Crouch* vs. *Roemer,* 103 U. S. 797, 26 L. Ed. 426; *Roberts* vs. *Ryer,* 91 U. S. 150, 23 L. Ed. 267; *Smith* vs. *Nichols,* 21 Wall. 115, 22 L. Ed. 566; *Hicks* vs. *Kelsey,* 18 Wall. 670, 21 L. Ed. 852; *National Hollow Brake Beam Co.* vs. *Interchangeable, etc., Co.,* 106 Fed., 693, 45 C. C. A. 544; *National Folding Box and Paper*

Co. vs. *Lithographic Co.,* 81 Fed. 395, 26 C. C. A. 448.'

Judge Vaker's remarks in the case of *Grist Mfg. Co.* vs. *Parsons,* 125 Fed., 116, very aptly describe what Mr. Ray did in the way of invention. He says:

> "And though Johnson made a better selection and arrangement than did Horace's painter, who 'joined a human head to neck of horse, culled here and there a limb, and daubed on feathers various as his whim, so that a woman, lovely to a wish, went tailing off into a lothsome fish,' the genius of the artist was not more wanting in one case than that of the inventor in the other, for it is not invention to combine old devices into a new article without producing any new mode of operation."

IV.

First Ray Patent

This patent discloses a prior art form of electric motor, *plus* a prior art form of centrifugal fan within its prior art form of casing, having therein the prior art partition or diaphragm *plus* a prior art form of atomizing cup located within the prior art form of air nozzle, plus a prior art section of pipe for conveying oil to the cup.

The motor, fan and cup are mounted on the same shaft in the prior art manner and the whole aggregation is hinged to the furnace wall adjacent an opening therein in the prior art manner.

It will be noted that no flexible conduit or other means are disclosed for conveying oil from the source of supply to the section of oil pipe or tube 14 shown within the air nozzle in Fig. 1 of this patent. Evidently Ray, at the time of applying for this patent, assumed, as he certainly was justified in assuming, that any skilled mechanic, in attempting to make or use the burner disclosed in this patent, would have sense enough to select and utilize one of the prior art forms of means for conveying oil to a hinged oil burner, such as the prior art flexible oil conduit or such as the prior art oil pipes having sections thereof forming the hinge pintles.

Certainly, if the defendant attacked this first Ray patent on the ground that the same failed to disclose

an operative structure by reason of its failure to show some means for conveying oil from the source of supply to the section of oil tube shown within the hinged burner casing, and that invention would be required to devise such means, the ready answer of plaintiffs' counsel would naturally be that such means were known and disclosed in the prior art and that all such mechanic would have to do would be to select from such prior art oil-feeding means the particular form thereof that suited his fancy. And this answer would be a good and sufficient answer. However, when we come to consider the second Ray patent it will be seen that Ray predicates invention on just such a selection of prior art oil-feeding means for use with the same hinged burner disclosed in this first Ray patent.

It will be noted that the atomizing cup, illustrated in the first Ray patent, is shown to be almost as large as the electric motor. Plaintiffs' expert, Whaley, said the diameter of the fan "must be at least seven times the diameter of the atomizing cup to drive a sufficient force of air across the film of oil leaving the periphery of the cup and to divert its direction approximately in line with the axis of rotation" (R. 191).

It will be noted that the diameter of the fan, illustrated in this first Ray patent, is *not* seven times the diameter of the cup. If we attacked this patent on the ground that it did not disclose an operative struc-

ture because the drawings disclosed too small a fan, the ready answer of plaintiffs' counsel would naturally be that patent drawings are not made to scale and that patents are addressed to those skilled in the art and one skilled in the art would certainly have sense enough to use a fan of sufficient size and of the proper design to do the required work, and, for that reason, the patent disclosure was sufficient to enable one to make and use the burner disclosed therein without the exercise of the inventive faculty. And this answer would also be a good and sufficient answer. However, when we come to a consideration of the prior art patents, we will find opposing counsel making use of a very different criterion or standard in judging the same and attacking the same, because, according to the patent drawings, some fan appears to him to be too small to do the required work, or some other feature appears to him to be out of proportion, etc. In other words, we will find plaintiffs, in respect to the Ray patents and in respect to the prior art patents, advocating the double standard.

We shall now consider claims 3, 4, 7, 8, 9, 10, 11 and 12 of this first Ray patent No. 1,193,819, issued on August 8, 1916. The said claims are the only claims of this patent involved herein and the lower Court found and adjudged all said claims void *for want of invention.*

Claim 3 of the First Ray Patent

In quoting the exact words of this claim 3, we shall segregate the various elements thereof as follows:

Claim 3—"An oil burner comprising:

(a) a casing having a restricted tubular discharge nozzle,

(b) a rotatable blower mounted in the casing for impelling air through the nozzle,

(c) an oil spraying nozzle comprising

(d) a cup having a perforated bottom carrying a stem secured to the blower for rotation therewith and a rearwardly extending flange overhanging the stem, and

(e) a pipe for delivering oil into the flange and through the perforated cup bottom for deliverance in a centrifugal manner into the surrounding air jet."

This claim covers the *specific* type of cup specifically described, *plus* the other elements *generically* expressed.

In our discussion of the question of aggregation, we referred to the testimony showing that it was immaterial, in respect to the mode of operation of the whole burner, whether the particular species of cup, disclosed in this first Ray patent, or the particular and different species of cup, disclosed in the second Ray patent, was aggregated with the other elements of the burner. This being true, claim 3 necessarily de-

scribes a mere aggregation of elements and not a true patentable combination, because each and all of said elements are old and the aggregation thereof has no new mode of operation and accomplishes no new results. As said by the Supreme Court in *Specialty Mfg. Co.* vs. *Fenton Mfg. Co., supra:*

> "Putting the Hoffman patent in its most favorable light, it is very little ,if anything, more than an aggregation of prior well-known devices, each constituent of which aggregation performs its own appropriate function in the old way. Where a combination of old devices produces a new result, such combination is doubtless patentable, but where the combination is not only of old elements but of old results, and no new function is evolved from such combination it falls within the rulings of this court in *Hailes* vs. *Van Wormer,* 20 Wall. 353, 368. . . ."

All of the elements of this claim are disclosed in the prior art, as we shall now proceed to point out.

(1) "A casing having a restricted tubular discharge nozzle," is disclosed in Fig 4 of the 1892 Klein patent No. 473,759 and in the 1895 Eddy patent No. 540,650.

(2) "A rotatable blower mounted in the casing for impelling air through the nozzle," is disclosed in said Fig 4 of the Klein patent. In the Eddy burner the blower is located at a distance and the air conveyed to the burner by a conduit. To locate the blower on the Eddy shaft within the casing would be

a matter of mere machine design and would not change the mode of operation of the burner.

(3) "An oil spraying nozzle" is disclosed in both the Eddy and Klein and other prior patents.

(4) "A cup having a perforated bottom carrying a stem secured to the blower for rotation therewith and a rearwardly extending flange overhanging the stem," is *identical* with the King-Becker 1911 cup in evidence as "Defendant's Exhibit FF, King-Becker 1911 Device" (R. 144), and which cup is also disclosed in the drawing, signed and certified to before a notary public on August 3, 1911, and in evidence as "Defendant's Exhibit EE, King-Becker Drawing" (R. 142). Substantially the same cup is also disclosed in said Eddy patent. The Eddy cup also embraces the perforated bottom and the rearwardly projecting flange. The Fesler May, 1912, patent, also discloses a cup having the rearwardly projecting flange into which the oil is fed. We shall hereafter discuss the evidence relating to the King-Becker cup used by them in 1911 and which identical cup is in evidence.

(5) "A pipe for delivering oil into the flange and through the perforated cup bottom for deliverance in a centrifugal manner into the surrounding air jet," is identical with the supply pipe used by King and Becker in 1911 in connection with their cup, and said pipe is in evidence as part of the said "Defendant's

Exhibit FF—King-Becker 1911 Device." In the Eddy burner, the hollow shaft operates as such oil supply pipe.

The foregoing constitute all the elements of claim 3 and all of said elements are old and function in the prior art manner to accomplish the prior art results.

Claim 4 of the First Ray Patent Completely Anticipated By Eddy 1895 Patent

Claim 4—"In an oil-burning apparatus,

(a) a casing having a nozzle,

(b) an oil spraying cup rotatable within the nozzle and provided with a plurality of perforations in its bottom only,

(c) means for rotating the cup, and

(d) (means) for supplying air for the nozzle, and

(e) means for supplying oil for passage through the perforations of the cup and discharge from the latter."

All of the elements of this claim, just as they are described therein, are disclosed in said Eddy 1895 patent No. 540,650.

Anticipation of this claim 4 by said Eddy device is full and complete. In other words, there are present in the Eddy "oil-burning apparatus, a casing having a nozzle, an oil-spraying cup rotatable within the nozzle and provided with a plurality of perfora-

tions in its bottom only, means for rotating the cup and for supplying air to this nozzle, and means for supplying oil for passage through the perforations of the cup and discharge from the latter." An inspection of the Eddy patent drawings shows claim 4 accurately describes the Eddy device, which embraces each and all the elements of the claim just as those elements are described therein. Furthermore, it is obvious said elements function in the Eddy device in the same way to produce the same results.

Claim 7 of the First Ray Patent

Claim 7—"A centrifugal oil burner comprising in combination:

(a) a motor and a
(b) motor shaft, upon which is mounted
(c) a fan of relatively large diameter with respect to its width,
(d) a fan casing, said casing having a nozzle in axial line with and surrounding and spaced from said shaft, said casing having
(e) a diaphragm between the fan and nozzle around which the air travels in a relatively thin sheet to the nozzle, an
(f) oil distributing cup on the end of the shaft within said nozzle
(g) means to deliver oil to the cup,
the air passing through the nozzle having a thin cylindrical discharge substantially coaxial with the oil cup and intercepting the centrifugally discharging oil from the cup, substantially as described."

This claim covers the *specific* centrifugal fan specifically described therein, *plus* the other elements *generically* expressed. In other words, this claim attempts to monopolize the old and well-known engineering principles controlling the design of a centrifugal fan for delivering a small volume of air at the pressure necessary to do the required work. We have already referred to the prior art centrifugal fans, such as the Harker and Mack, and to their enclosure in casings provided with partitions or diaphragms. These prior art centrifugal fans, their casings and diaphragms and discharge nozzles, are the same as and correspond to the above elements of the claim designated as (c), (d) and (e). Elements (a) and (b), the motor and motor shaft, are found in many of the prior patents. Element (f), the oil cup on the shaft within the nozzle, and element (g), means to deliver the oil to the cup, are found in the said prior Eddy and Klein devices. We have already discussed at length the Klein thin cylindrical discharge of air substantially coaxial with the oil cup and intercepting the oil.

We wish particularly to draw attention to the fact that this claim 7 constitutes a bold attempt to absolutely monopolize the use of centrifugal fans in oil burners, notwithstanding their former use therein and notwithstanding that, long prior to Ray's appearance on the scene, the centrifugal fan was a well-known instrumentality and a most efficient type of fan,

capable of being used in all mechanical environments wherein a blast of air was desired for any particular purpose. In a centrifugal cup oil burner, only a small volume of air at a pressure sometimes as low as 3 ounces is required. In claim 7, Ray describes a centrifugal fan so proportioned, in accordance with old and well-known general engineering principles controlling fan designing, that it will deliver a small volume of air at the necessary pressure. By so describing the relative proportions of the fan in this claim, the attempt is made to prevent every one from using a centrifugal fan properly designed to efficiently do the required work—that is, deliver such small volume of air at such a pressure.

Plaintiffs contend the type of fan disclosed in the prior Klein patent is not as efficient as the centrifugal type of fan. If Klein did not select the most efficient type of fan, did it amount to invention to merely select another well-known type of fan because it was more efficient? If it did, then Mack made the invention because he, in 1895, selected the centrifugal type of fan for use in his oil burner, as disclosed in the Mack patent.

The centrifugal type of fan was a well-known device and machine for creating a current of air and known as such long prior to Ray's appearance. Being such a device, no one was thereafter entitled to monopolize its use in any particular art, even though it was not before used for such a new purpose.

In *Heald* vs. *Wright,* 104 U. S. 737, 756, the Supreme Court held that there was no invention in applying a straw feeding attachment, old in fire-box boilers, to a return-flue boiler. The Court said:

> "The application of it to the return flue boilers, although these were not actually known to the inventor, is merely a new and analogous use of an old device, operating in the very manner intended by its inventor, and the use of which, in the new application, involved no invention, and could not, therefore, be the subject of a patent."

In *Blake* vs. *San Francisco,* 113 U. S. 679, the Supreme Court held invalid a patent for the application of an automatic relief valve to a steam fire engine and hose as being a mere unpatentable double use of the old relief valve. The Court said: (page 682)

> "Where the public has acquired in any way the right to use a machine or device for a particular purpose, it has the right to use it for all the like purposes to which it can be applied, and no one can take out a patent to cover the application of the device to a similar purpose."

Plaintiffs' witness, Whaley, said the Klein fan, as illustrated in the Klein patent drawings, was not large enough to produce the air pressure required to do the work which Klein, in his patent specification said it does, to wit: divert the oil to a direction parallel with the cup's axis of rotation. According to the testimony of this same witness, as above pointed out, the size of fan, disclosed in the drawings of this first Ray patent,

is not large enough to do such work—that is, so divert the atomized oil to a direction parallel with the cup's axis of rotation.

However, no invention is required to make a device of sufficient size to do a specified work and no invention is required to select one type of fan in preference to another less efficient type.

Claim 8 of the First Ray Patent

Claim 8—"In an oil burner a

(a) gradually tapering air nozzle,

(b) a gradually flaring cup arranged within the nozzle and extending a distance therein to form with the nozzle a comparatively long annular air passage which gradually decreases in area toward the contracted end of the nozzle, the latter closely surrounding the cup whereby a thin sheet of air will issue from the annular passage provided;

(c) oil supply means for the cup, and

(d) air supply means comprising a casing supporting the nozzle and a blower of large diameter arranged within the casing and provided with narrow blades of small area whereby a small volume of air under high pressure is obtainable."

This claim covers the prior art form of air nozzle and cup, plus the oil supply means, plus the fan so proportioned as to deliver the prior art volume of air at the prior art pressure.

The prior Klein, Eddy and Becker patents disclose such form of nozzle and cup and such oil supply means and Klein discloses such small volume of air issuing from his restricted air outlet and having such pressure which is sufficient to divert his atomized oil to a direction parallel with the cup's axis of rotation.

Claim 9 of the First Ray Patent

Claim 9—"In an oil burner

(a) an air nozzle;

(b) an oil spraying nozzle rotatable in the air nozzle and comprising a cup having a rearwardly extending flange, and

(c) means for supplying oil to the flange for delivery to the cup."

This claim covers the specific cup plus the other elements generically described.

The Eddy patent discloses such a cup plus the other elements of the claim and, therefore, completely anticipates the claim. The King-Becker 1911 device also embraces all the elements of this claim and, therefore, anticipates the same.

Claim 10 of the First Ray Patent

Claim 10—"In an oil burner:

(a) an air nozzle;

(b) oil spraying means rotatable therein and comprising a cup having a rearwardly extending flange communicating with the cup, and

(c) a delivery pipe having its delivery end deflected and extending into the flange of the cup, for supplying oil thereto."

This claim is also completely anticipated by the said King-Becker 1911 burner. The said Eddy patent No. 540,650, discloses a cup having the rearwardly projecting flange forming a chamber in the rear of the slotted bottom of the cup but, in place of a separate oil pipe, the Eddy hollow shaft is utilized for delivering the oil into such flange. The other elements of the claim are also disclosed in the Eddy patent, which, therefore, is a substantial anticipation of the claim, as such variation in respect to the oil pipe does not have any effect on the operation of the device. The Fesler 1912 patent is also a complete anticipation of this claim. The Fesler patent discloses "an oil burner comprising an air nozzle, an oil cup rotatable therein and said cup having the rearwardly projecting flange or channel 20 and the oil pipe 24 having its delivery end deflected and extending into the flange of the cup for supplying oil thereto."

Claim 12 of the First Ray Patent

Claim 12—"The combination in an oil burner of

(a) an open mouth cup, having unperforated side walls, and

(b) an oil supply through the bottom;

(c) a circular casing having

(d) a nozzle extending from one side, axial with and enclosing the cup, and forming therewith a long narrow convergent annular channel;

(e) an air blower within the casing with narrow blades of small area, and

(f) a shaft upon which both cup and blower are fixed to rotate in unison, said blower having a diameter which will discharge air under sufficient pressure to divert the centrifugally discharged oil into the line of travel of the air."

This claim merely enumerates the elements contained in the claims already discussed. The cup is disclosed in the said Eddy patent as well as in the King-Becker 1911 device. The casing and air nozzle are the same as those in the Klein device. We have already discussed the fan dimensions and Ray's attempt to prevent anyone from using a fan so designed to accomplish the result disclosed in the Klein patent.

The foregoing comprise all the claims of the First Ray patent involved in this suit.

Klein 1892 Patent

On page 63 of their brief herein, opposing counsel state, regarding the Klein burner: "This is a rotary burner of the turbine type, as distinguished from the fan type of Ray."

The foregoing is a most misleading statement because it is only a half-truth and nothing is more misleading than half the truth.

The whole truth is that the Klein patent discloses both the turbine type of burner and the fan type of burner. Figures 1 and 3 of the Klein patent illustrate the turbine type of burner in which the current of air is created at a distance from the burner and conveyed to the burner casing by a conduit. Within the casing a wind-wheel C is mounted on the shaft on which is mounted the atomizing cup D and the current of air, rushing past this wind-wheel, rotates the wind-wheel and thereby rotates the shaft on which the cup is mounted. Such current of air is discharged through the *restricted* annular air outlet surrounding the periphery of the cup with sufficient force to divert the atomized oil from its right angle direction to a direction parallel with the cup's axis of rotation and thereby produce the same *straight-shot* form of flame produced in the old prior art burners in which the oil was atomized solely by the air or steam under a pressure of 25 to 30 pounds, as disclosed in the 1890 Collins' patent.

Figure 4 of the Klein patent discloses the *fan type of burner,* and it is such Klein fan type of burner that opposing counsel failed to mention. As Klein says at line 51, page 1, of his patent:

> "When the air propels the wheel C, as in Figs. 1 and 3, it is forced through the chamber A-1 by some compressing or forcing device at a distance; but *when the wing-wheel C propels the air, as in Fig.* 4, the air is supplied from the surrounding atmosphere."

As Klein states, in his turbine type, the air current is produced at a distance by a compressor or other device. As opposing counsel state on page 56 of their brief:

> "The pressure on the Ray (and infringing Simplex) burner varies from a few ounces up to perhaps two pounds per square inch on some of the larger burners. The pressure obtainable with an air compressor set is, of course, much higher than this, or up around one hundred pounds per square inch."

So it appears that an air pressure of only a few ounces, approximately three ounces to be exact, is necessary to sufficiently deflect the atomized oil to produce the straight-shot flame and Klein, with his air compressor, could, as admitted by opposing counsel, produce an air pressure up to one hundred pounds.

In the Klein fan type burner of Fig 4, the shaft is rotated by a motor belted to the pulley C-2 on the shaft. The fan C and the atomizing cup D are

mounted on the shaft so motor driven. As Klein says at line 41, page 1, of his patent:

> "In the construction shown in Fig. 4, the air-wheel C and the centrifugal distributor D are propelled by a motor which is belted to the pulley C-2, which is connected with the air-wheel and distributor by the sleeve C-1, and *hence the air-wheel serves to propel the air through the chamber A-1.*"

We assume that opposing counsel entirely overlooked the foregoing fan type burner so illustrated in Fig. 4 of the Klein patent and so described in the specification and this fact may be the explanation of their misconception of the Klein patent disclosure and their erroneous statements regarding the same.

It will be noted that in this Klein fan type burner of Fig. 4, the oil is fed to the centrifugal cup D through the oil pipe B, which extends through the hollow shaft or sleeve C-1. This method of feeding oil to the cup was also appropriated by Mr. Ray and is disclosed in the second Ray patent and the contention is seriously made that invention was required to so make use of this old prior art oil feed in the old prior art manner!

On page 65 of their brief, opposing counsel assert, without any justification whatever, that the Klein atomizing cup is of large diameter, whereas the Ray cup is of small diameter.

Absolutely nothing is said, either in this first Ray

patent or in the Klein patent, regarding the diameter or size of the atomizing cup.

However, if we refer to Fig. 1 of this Ray patent, we at once perceive *a very large diameter cup* is illustrated. In fact, the cup is disclosed as being almost as large as the electric motor 10!

If the *sufficiency* of the patent disclosure of the mode of operation of the device is *dependent upon disclosing the diameter of the cup,* then this first Ray patent must be void if a small diameter cup is *essential.* If the Klein patent does not disclose the same mode of operation disclosed in this Ray patent, because the Klein patent does not disclose a small diameter cup, then, in the name of common sense, how can it be contended this Ray patent discloses such mode of operation when it illustrates a *large* diameter cup and nothing is said in the Ray patent specification what the diameter of the cup is or should be?

The ready answer of opposing counsel to the foregoing will be that the Ray patent is addressed to those skilled in the art and that they could be relied on to select the proper diameter of cup, but, as to the Klein patent being also addressed to those skilled in the art, counsel will maintain a discrete silence. Here, again, we will have opposing counsel advocating the *double standard* in judging the Ray patents and in judging the prior art patents.

Opposing counsel, as stated before, criticize the size of the Klein fan as illustrated in the Klein patent

drawings, but, according to plaintiffs' own expert witness, the size of the fan, *illustrated in the Ray patent drawings,* is too small to divert the atomized oil to a direction parallel with the cup's axis of rotation and thus produce the straight-shot flame.

It is thus apparent, that both Klein and Ray, in their respective patent disclosures, relied on the common sense, knowledge and skill of those to whom their patents were addressed, to design and construct the respective elements, with such proportions and dimensions, as to enable said elements to do the required work. And Klein disclosed that his air current would deflect the atomized oil from its right angle direction and project it parallel with the cup's axis of rotation, and Ray said nothing more.

Straight-Shot Flame

Plaintiffs' counsel concede there was nothing broadly new in producing in oil burners a straight-shot flame. That was the form of flame necessarily produced in the prior art burners wherein the oil was atomized by a horizontal blast of steam or air issuing from the tip of the burner under a pressure of 25 to 30 pounds.

The 1901 Thom patent discloses such a form of burner which, it will be noted, is hinged by a swivel joint so as to enable the burner to be withdrawn from the opening in the furnace wall. As Thom says: "The joints permit the burner to be moved bodily into and out of the furnace . . ."

The 1890 Collins' patent also discloses a similar straight-shot burner so hinged as to enable it to be swung away from the furnace opening. As Collins says, at line 92, page 2, of his patent:

> "The burner is mounted in front of an orifice in the furnace wall. In the case of a boiler-furnace said opening may be in the door, which otherwise may be of ordinary construction. In case the furnace is for heating metals and similar purposes, the opening may be at any proper point in the wall. In all cases and especially in the case of a steam generating furnace, it is desirable to have the 'burner' quickly and easily removable from its working position, so that the fire-chamber may be opened for the purposes of repair or the introduction of solid fuel, as hereinbefore stated."

As above set forth, the same straight-shot flame was also produced in the prior art rotary cup burners, such as the Klein fan rotary cup burner. The desirability of producing the straight-shot flame was due to the location of the burner in an opening in the furnace end wall. When so located it was obvious that a flame, capable of being horizontally projected into the furnace beneath the boiler, was the desirable form of flame and, to produce such form in the rotary cup type of burner, it was only necessary to direct the air current horizontally and with sufficient force to deflect the atomized oil and carry the flaming vapor to the desired distance in the fire-box beneath the boiler. No invention was required to do this. Only engineering propositions and matters of machine design were required to produce the desired results.

V.

Second Ray Patent

This patent was applied for on May 8, 1916, or almost *seventeen months* after the filing, on November 30, 1914, of the application upon which the first Ray patent was issued.

This second Ray patent discloses a rotary atomizing cup burner similar to that disclosed in the first Ray patent *plus* some prior art features.

The first Ray patent burner is hinged to a plate on the furnace wall. In the second Ray patent burner the said plate is enlarged to surround the furnace wall opening and is provided with a tubular extension to form a metallic lining for such opening.

When the first Ray patent burner is moved into operating position with the air nozzle and atomizing cup therein projecting through the furnace wall opening, the fan casing is spaced from the furnace to a small extent as illustrated in Fig. 3 of that patent. In the second Ray patent burner, the said space, between the fan casing and furnace wall, when the burner is in operating position, is only slightly less than the said corresponding space in the burner of the first Ray patent. For this reason, Ray states such fan casing operates as a closure for the opening in the furnace wall, although an inspection of Fig. 3 of the second Ray patent shows that the fan casing is still spaced from the front plate on such furnace wall, so

that the only difference between these two burners, in this respect, is that the fan casing of the second Ray patent is closer to the wall than is the fan casing of the first Ray patent, when the burners are in operating position and neither actually forms any closure for such wall opening.

In the second Ray patent burner, a latch 40 is provided for holding the burner close to the furnace wall in operating position. This latch comprises a post projecting from the plate on the furnace wall and having a pivoted arm adapted to be swung downwards in back of the fan casing and thus keep the burner from swinging away from the furnace wall. In some of the claims this simple latch is referred to as a "post and keeper" and the same is designated in the specification by the number "40" and in Fig. 2 by said number, but in Fig. 3 this latch is erroneously numbered "4." No latch is shown in the first Ray patent for keeping the burner in position. As the hinged burner corresponds to a hinged door, there can be no invention in supplying a latch to keep either in a closed position.

The first Ray patent discloses no oil feed system for supplying the burner with oil. The second Ray patent discloses a prior art system for supplying oil to the burner and returning the excess oil to the source of supply. This oil feed and return system comprises an oil supply pipe to the oil pump operated by the motor and a section of such pipe forming one of the hinge pintles; a return oil pipe from the pump to the source

of supply to take care of the oil pumped in excess of the amount permitted to flow through the pipe to the atomizing cup and a valve in said pipe to control the amount of oil flowing to the cup.

The foregoing constitute the features added to the burner disclosed in the first Ray patent and which features are made elements of the claims involved herein.

Briefly stated, the features added to the first Ray patent burner and made elements of the second Ray patent claims involved herein, are as follows:

(1) furnace plate having conical extension to form metal lining for furnace wall opening;

(2) latch;

(3) fan casing forming closure for furnace wall opening (which it does not do);

(4) oil feed and return system.

Claims 1 to 6 and 14 to 20, inclusive, of this second Ray patent are charged to be infringed and all said claims were found and decreed, by the lower court, to be void for *want of invention.*

There is little reason for analyzing the foregoing claims, because they merely attempt to cover in various and sundry ways the addition of the foregoing features to the burner disclosed in the first Ray patent. However, we shall briefly set forth the particular feature or features so added to the burner of the first

Ray patent and attempted to be covered in each of said claims in connection with said burner or portions thereof. In doing so, we shall merely group the elements of each claim, found in the burner of the first Ray patent, under the designation "1st Ray burner" and follow same by a list of said features added thereto and so claimed therewith.

Claim 1—1st Ray burner *plus* plate having tubular extension forming lining for furnace wall opening.

Claim 2—1st Ray burner *plus* plate having tubular extension plus latch.

Claim 3—1st Ray burner *plus* plate having opening registering with furnace opening, *plus* fan casing forming closure for furnace opening (?) *plus* oil feed through hinge pintle.

Claim 4—1st Ray burner *plus* plate having tubular extension *plus* fan casing forming closure (?) *plus* oil feed through hinge pintle *plus* valve controlling pipe to cup and return pipe to source of supply.

Claim 5—1st Ray burner *plus* plate having tubular extension *plus* fan casing forming closure (?) *plus* oil feed and excess oil return pipes having sections forming hinge pintles *plus* control valve.

Claim 6—1st Ray burner *plus* plate having tubular extension *plus* fan casing forming closure (?) *plus* means for delivering fuel to atomizing cup.

Claim 14—1st Ray patent burner *plus* oil feed and return pipes having sections forming hinge pintles.

Claim 15—1st Ray burner *plus* plate having tubular extension *plus* oil feed means.

Claim 16—1st Ray burner *plus* plate having tubular extension *plus* fan casing forming closure (?) *plus* oil feed through hinge pintles.

Claim 17—1st Ray burner *plus* oil feed and oil return through hinge pintles.

Claim 18—1st Ray burner *plus* oil feed and oil return through hinge pintles *plus* oil pump.

Claim 19—1st Ray burner *plus* oil feed and oil return through hinge pintles *plus* double T pipe connection between hinge lugs.

Claim 20—1st Ray burner *plus* oil feed and oil return through hinge pintles *plus* oil pump.

From the foregoing it is apparent that the claims involved herein merely attempt to cover the addition, to the burner of the first Ray patent, of the following prior art features:

(1) furnace plate having tubular extension;

(2) latch;

(3) fan casing adapted to form a closure for the opening in the furnace wall (which it does not do);

(4) oil feed and return system embracing pipes, having sections thereof forming the hinge pintles, a control valve, and an oil pump.

Each of the foregoing features was merely appropriated by Ray from the prior art, as we shall now point out.

(1) furnace plate having tubular extension.

This feature is disclosed in the Eddy 1895 patent No. 540,650; also in the Gordejeff 1904 patent; and also in the Hamann 1905 patent, wherein the hinged fan casing forms the closure for the opening.

Furthermore, even if this feature was not appropriated by Ray from the prior art, it certainly could not amount to invention to line a hole with a metal lining.

(2) latch.

A latch to hold a hinged structure in closed position is too trivial a detail to discuss.

(3) fan casing forming closure.

As above pointed out, the fan casing of this second Ray patent is only slightly closer to the furnace wall when the burner is in operating position than is the fan casing of the first Ray burner and neither touches the wall nor the plate on the wall. Therefore, it is not correct to say the fan casing, in this second Ray patent, forms a closure for the opening in the wall. However, the Hamann 1905 patent discloses a hinged fan casing operating as a tight closure for the opening in the furnace wall. *We also wish to call attention*

to the fact that this Hamann device, although not an oil burner, embraces a centrifugal fan of large diameter with narrow blades and the air, discharging from the periphery of the fan, flows over the diaphragm 33 into the adjacent restricted enclosed chamber from which it discharges through a substantially central air nozzle into the furnace, all as adopted by Mr. Ray nine years afterwards.

The DeLandsee 1870 patent discloses an oil burner hinged to the furnace wall and the burner casing forms a tight closure for the opening in the wall.

(4) oil feed and return system.

The oil feed and return system disclosed in this second Ray patent is another feature appropriated by Mr. Ray from the prior art. "Defendant's Exhibit DD" (R. 107), being a bulletin or catalog published by defendant's predecessor, American Heat & Power Co., on March 20, 1914, discloses such a system which was common practice as early as 1911 (R. 155). In fact, the fire marshal of San Francisco at that time required the use of the surplus oil return conduit to the source of supply from the oil pump (R. 155). In said bulletin the return oil pipe is designated in the illustration of the system by the word "Return." On page 105 of the record, De Laney describes such system, which embraced an electric motor operating the oil pump and a control valve.

We have heretofore pointed out that the first Ray patent discloses no oil feed and return system so that, at the time Ray applied for such patent, he evidently assumed that it was unnecessary to disclose what was so well known and that anyone, attempting to make or use the burner disclosed in his patent, would naturally and without difficulty incorporate in such burner such old and well known oil supply and surplus oil return system. The system was old and, also, the use of the hinge pintles as oil conduits for a hinged oil burner was old. So it is no wonder he did not trouble himself with disclosing such oil system in connection with his burner disclosed in his first patent.

If any invention was required to adapt an oil feed system for use with the burner disclosed in the first Ray patent, then that patent is void for failure to disclose an operative device. Any patent is void if it fails to disclose how the device covered thereby can be made and used without the exercise of further invention. However, if a skilled mechanic can, without invention, supply what is lacking in the patent disclosure, then the validity of the patent is not affected by failing to set forth what is well known to anyone skilled in the art.

As said by the Supreme Court in *Loom Co.* vs. *Higgins*, 105 N. S. 585:

> "That which is common and well known is as if it were written out in the patent and delineated in the drawings."

The Anderson 1903 patent discloses a hinged "Oil Burner and Feed Mechanism Therefor" which embraces the use of pipes, sections of which form the hinge pintles just as in this second Ray patent. It will be noted that Anderson entitles his invention "Oil Burner and Feed Mechanism Therefor." In other words, Anderson considered he had invented a "Feed Mechanism" for oil burners as a separate and distinct mechanism for use with any type of hinged oil burner. Claim 4 of this 1903 Anderson patent reads as follows:

> "4. In a hydrocarbon-furnace, the combination of separate fuel feed pipes, short sections of pipe forming the pintles of the furnace door and a swivel-joint connecting each of the short sections with one of the feed pipes, a burner and pipes connecting the short sections of pipe with the burner."

By reference to the Anderson patent it will be noted that the so-called "furnace door" *forms a part of the burner structure* and the burner, as a whole, including the door, is a hinged burner. In other words, the Anderson burner forms a closure for the opening, because the so-called door is rigidly associated with the other parts of the burner.

It is apparent that the foregoing mechanism, as a means for conveying a fluid to and from a hinged structure, can be used with any type of hinged structure, and after Anderson's disclosure thereof in 1903,

no one was thereafter entitled to monopolize the use thereof. It is also obvious that Ray merely appropriated said Anderson mechanism for use with the burner disclosed in his first patent. Certainly no invention was required to do this, either in connection with said burner or any other type of burner. If invention was required to use this Anderson oil feed mechanism with said burner of the first Ray patent, then said patent is void, by reason of an insufficient disclosure.

As the Supreme Court said in *Blake* vs. *San Francisco,* 113 U. S. 679, 682:

> "Where the public has acquired in any way the right to use a machine or device for a particular purpose, it has the right to use it for all the like purposes to which it can be applied, and no one can take out a patent to cover the application of the device to a similar purpose."

And yet that is exactly what Mr. Ray has attempted to do and, therefore, his patent is void.

The use of the hinge pintles as fluid conduits is also disclosed in the 1894 Leyson patent; in the Hamann & Voegeli 1896 patent; and in the Gordejeff 1904 patent.

From the foregoing analysis of the old prior art features so appropriated by Ray and so employed by him in the old prior art manner to perform their respective prior art functions, it is apparent no invention, but only mechanical skill was exercised by Ray.

Certainly one does not make an invention every time he employs, in connection with some other specific construction of burner, a furnace wall plate having a tubular extension forming a metal lining for the hole in the wall. Such a plate and extension are obviously adapted for use with any specific type of burner and, having been used in the prior art with burners, it required no invention on the part of anyone to thereafter use such plate and extension in connection with any other burner.

Certainly one does not make an invention every time he so arranges some particular hinged burner construction that a part thereof forms a closure for the wall opening. Such an arrangement of the parts was old in some prior art hinged burners and, thereafter, no one was entitled to monopolize such arrangement with any other hinged burners.

Certainly one does not make an invention every time he employs, in connection with some other specific construction of oil burner, an oil feed and return system. Such a system is obviously adapted for use with any specific construction of oil burner and, having been used in the prior art with oil burners, it required no invention on the part of anyone to thereafter use such system in connection with any other burner.

> "When the public has acquired in any way the right to use a machine or device for a particular purpose, it has the right to use it for all the like

purposes to which it can be applied, and no one can take out a patent to cover the application of the device to a similar purpose."

Blake vs. *San Francisco,* 113 U. S. 679, 682.

Ray's selection and arrangement of these various and sundry old instrumentalities did not result in the creation of a device having any new mode of operation or one accomplishing any new results. Whatever changes he made were changes in machine design requiring merely the exercise of mechanical skill and discretion in selecting old instrumentalities and arranging them together to perform the same old functions in the same old ways. That no invention was required to do what Ray did is apparent from the following authorities:

"Neither is it invention to combine *old devices* into a new article without producing any *new mode* of operation. *Stimpson* vs. *Woodman,* 10 Wall. 117; *Heald* vs. *Rice,* 104 U. S. 737; *Hall* vs. *Macneale,* 107 U. S. 90. In the recent case of *Hill* vs. *Wooster,* decided January 13 of this year, 132 U. S. 693, 700, it is said: 'This court, however, has repeatedly held that, under the Constitution and the Acts of Congress, a person, to be entitled to a patent, must have invented or discovered some new and useful art, machine, manufacture or composition of matter, or some new and useful improvement thereof,' and that 'it is not enough that a thing shall be new, in the sense that in the shape or form in which it is produced, it shall not have been before known, and that it shall be useful, but it must, under the Constitution and the statute,

amount to an invention or discovery'; citing a long list of authorities.

We are of the opinion that the patent in suit does not meet the requirements of the rules deduced from the decisions to which we have referred. We do not think there is any patentable invention in it; but, on the contrary, that it is merely a carrying forward of the original idea of the earlier patents on the same subject—simply a change in form and arrangement of the constituent parts of the shoe, or an improvement in degree only."

Burt vs. *Evory,* 133 U. S. 349, 359.

In the case of *Consolidated Roller Mill Co.* vs. *Walker,* 138 U. S. 124, 131, the Supreme Court, quoting with approval from the decision of the lower court in said case, said:

"'It was also old and very common in machine shops and factories of various kinds, to provide an individual machine with a countershaft mounted directly in the machine frame, the countershaft being driven by a belt from the line shaft, and the machine by a belt from the countershaft. Furtherfore, it was no new thing to provide the journal boxes or hangers in which countershafts are mounted with means for independently adjusting the ends of the shaft.' It then adds that in view of the things referred to, the Court is unable to discover any patentable subject matter in claim 1 of Gray's patent; and that it falls directly within the established principle, that the application of an old process, machine or device, to a like or analogous purpose, with no change in the mode of application and no result substantially different in its nature, will not sustain a patent, even if the

new form of result has not before been contemplated; citing *Pennsylvania Railroad Co.* vs. *Locomotive Truck Co.,* 110 U. S. 490, and *Blake* vs. *San Francisco,* 113 U. S. 679.

It then says that it is quite clear, moreover, that the application of belting to drive roller grinding-mills, to obviate the difficulties incident to the use of cog-gearing and to secure the advantages set forth in Gray's specification, did not originate with him; and that, therefore, even were it conceded that his peculiar arrangement is attended with better results than had been attained previously, still this would not sustain the patent, for, the mere carrying forward of an original conception resulting in an improvement, in degree simply, is not invention; citing *Burt* vs. *Evory,* 133 U. S. 349, and that the conclusion is unavoidable, that the combination set forth in Gray's first claim evinces only the exercise of ordinary mechanical or engineering skill; citing *Hollister* vs. *Benedict Mfg. Co.,* 113 U. S. 59; *Thompson* vs. *Boisselier,* 114 U. S. 1; *Aron* vs. *Manhattan Railway Co.,* 132 U. S. 84; *Hill* vs. *Wooster,* 132 U. S. 693, 701; and *Howe Machine Co.* vs. *National Needle Co.,* 134 U. S. 388. We fully concur in these views and conclusions and regard them as entirely sufficient to justify the decree."

"The essence of a machine thus consists of its principle or structural law. Its shape, appearance, size, materials and *arrangement* are of no importance, except as they control its mode of operation."

Robinson on Patents, Sec. 178.

In *Atlantic Works* vs. *Brady,* 107 U. S. 192, the Supreme Court held invalid a patent for a dredging boat having a mud screw at the bow, in view of the

known use of the ordinary screw at the stern for the same purpose. The Court said (p. 199):

> "The process of development in manufactures creates a constant demand for new appliances, which the skill of ordinary head workmen and engineers is generally adequate to devise, and which, indeed, are the natural and proper outgrowth of such development. Each step forward prepares the way for the next, and each is usually taken by spontaneous trials and attempts in a hundred different places. To grant to a single party a monopoly of every slight advance made, except where the exercise of invention, somewhat above ordinary mechanical or engineering skill, is distinctly shown, is unjust in principle and injurious in its consequences.
>
> The design of the patent laws is to reward those who make some substantial discovery or invention, which adds to our knowledge and makes a step in advance in the useful arts. Such inventors are worthy of all favor. It was never the object of those laws to grant a monopoly for every trifling device, every shadow of a shade of an idea, which would naturally and spontaneously occur to any skilled mechanic or operator in the ordinary progress of manufactures. Such an indiscriminate creation of exclusive privileges tends rather to obstruct than to stimulate invention. It creates a class of speculative schemers who make it their business to watch the advancing wave of improvement, and gather its foam in the form of patented monopolies, which enable them to lay a heavy tax upon the industry of the country, without contributing anything to the real advancement of the arts. It embarrasses the honest pursuit of business with fears and apprehensions of concealed liens and unknown liabilities to law suits and vexatious accountings for profits made in good faith."

In *Heald* vs. *Rice,* 104 U. S. 737, the Supreme Court held that there was no invention in applying a straw-feeding attachment, old in fire-box boilers, to a return-flue boiler. The Court said (p. 756):

> "the application of it to the return-flue boilers, although these were not actually known to the inventor, is merely a new and analogous use of an old device, operating in the very manner intended by its inventor, and the use of which, in the new application, involved no invention, and could not, therefore, be the subject of a patent."

In *Blake* vs. *San Francisco,* 113 U. S. 679, the Supreme Court held invalid a patent for the application of an automatic relief valve to a steam fire engine and hose as being a mere unpatentable double use of the old relief valve. The Court said (p. 682):

> "where the public has acquired in any way the right to use a machine or device for a particular purpose, it has the right to use it for all the like purposes to which it can be applied, and no one can take out a patent to cover the application of the device to a similar purpose."

In view of the foregoing situation, his Honor, Judge Bourquin, was certainly justified in expressing himself as follows:

> "These elements and their uses in oil burning, to say nothing of analogous uses, were old when this patent was applied for, and in aggregation they operate in function and in result as they did and do in separation.
>
> Hence, to assemble motor, fan and cup, with

their incidents, upon a single shaft, all in simple and compact form, is not invention, but is only the ordinary and anticipated advance in the art by reason of mechanical skill and the enterprise of the manufacturer and salesman.

In fact, the only objects the patent declares are 'to provide in one complete unit' an oil burner of these elements, and 'as free from friction as possible' by reason of few bearings—advantages universally sought and indicative of naught but understood skillful aggregation of old elements.

The same is to be said of patent No. 1,285,376. To the aggregation of No. 1,193,819 it adds and attaches the oil supply pump, and for hinge pintles employs pipes for the oil supply, one to drain off any excess oil.

These additions also were at that time ancient in oil burners. The patents pleaded in defense and in evidence disclose every element and incident of complainant's, save the partition diaphragm or baffle in the fan casing. If this latter serves any purpose, it does not appear, nor any that the side casing of the fan blades will not serve. Hence, to insert this partition involves no invention. See the *Dunbar* case, 94 U. S." (R. 208).

In regard to the partition diaphragm or baffle in the Ray centrifugal fan, Judge Bourquin overlooked the fact, as hereinbefore pointed out, that such a partition or diaphragm in a centrifugal fan casing was a very old feature found in prior art centrifugal fans, wherein it was desired to discharge the air from the *fan casing* in a direction at right angles to the plane in which the fan blades revolved and in which plane the air was centrifugally driven from the periphery of the fan. The prior 1895 Mack patent dis-

closes such centrifugal fan having the said partition or diaphragm and, in Fig. II of the Mack patent, arrows indicate the centrifugal discharge of the air in a vertical plane from the periphery of the fan blades rotating in a vertical plane and the horizontal passing of the air over the circular edge of the diaphragm and then vertically downward parallel with the plane of rotation of the fan and then discharging through the horizontal air nozzle at right angles to the plane in which the fan rotates. As said before, such a diaphragm for so directing and controlling the direction of flow of the air so as to enable the same to be discharged from the fan casing in an axial direction at right angles to the plane of the fan's rotation, was an old feature and is also found in the centrifugal fan, of large diameter with narrow blades, disclosed in the Hamann 1905 patent.

The Hamann 1905 centrifugal fan, of large diameter with relatively narrow blades, rotates in a vertical plane in the fan casing in which there is the vertical stationary diaphragm 33 of circular form like Mack's and Ray's. The air, discharged in a *vertical* plane, from the periphery of the Hamann fan, flows *horizontally* over the entire circumference of the circular diaphragm 33 and then *vertically* towards the fan shaft, and then discharges through the horizontal, substantially centrally located air nozzle, all precisely as disclosed in the Ray patents in respect to the corresponding centrifugal fan so appropriated by

Ray from the prior art. By reason of said Hamann diaphragm 33, the stream of air, discharged from the periphery of the fan, flows axially through the passageway having such diaphragm as one vertical side thereof and the wall 15 as the other vertical side thereof, as disclosed in Fig. 2 of the Hamann patent. It is thus seen that the air, when flowing in a vertical plane axially, is separated from the revolving fan by such Hamann vertical diaphragm 33 of circular form and, therefore, the revolving fan cannot cause any swirling of such flowing air, as mentioned by opposing counsel on page 30 of their brief.

In view of the presence of these diaphragms in prior art centrifugal fans, it is most remarkable that opposing counsel should seek to make capital out of Judge Bourquin's mistake in thinking there was anything new in providing the old, well-known centrifugal fan with a partition or diaphragm for so forming a vertical air-passage for the air, free from the effects of the revolving fan! Did opposing counsel hope to have your Honors make the same mistake and decide this case on a mistaken understanding of the actual facts?

The foregoing merely demonstrates that Ray did not contribute a single new feature. He merely appropriated an old prior art centrifugal fan embracing the conventional features in respect to providing for a horizontal central air discharge from the fan casing at right angles to the vertical plane

in which the fan revolved and which fan and features, as early as 1895, had been used in oil burners.

> "Where the public has acquired in any way the right to use a machine or a device for a particular purpose, it has the right to use it for all the like purposes to which it can be applied, and no one can take out a patent to cover the application of the device to a similar purpose."

Blake vs. *San Francisco, supra.*

VI.

King-Becker Horizontal Rotary Burner

The King-Becker horizontal rotary burner was devised by them in 1911. The rotary atomizing cup, the oil feed pipe with deflected or bent end for feeding oil into the rearwardly projecting flange of the cup, and the section of pipe, forming the air nozzle, all as actually used by them in 1911, are in evidence as "Defendant's Exhibit FF—King-Becker 1911 Device" (R. 144).

"Defendant's Exhibit 'EE'—King-Becker Drawing" (R. 142), is a drawing disclosing said device, which embraced said cup and a fan and motor, all mounted on the same shaft, and the motor direct connected to an oil pump which supplied oil to the cup through the pipe having the deflected end for delivering oil into the rearwardly projecting flange of the cup. This drawing is dated August 3, 1911, and was signed by Messrs. King and Becker and witnesses on that date and duly certified to before a notary public on such date.

Mr. Joseph H. King resides in Oakland, California, and is now president and general manager of the Marchant Calculating Machine Company of Oakland. In 1911, Messrs. King and Becker formed the American Heat & Power Company, which had its plant at Oakland from that date until 1915, and said

company was succeeded by the Standard Oil Burner Company, the predecessor of the Bunting Iron Works.

The said King-Becker burner was tested and used by them at the Oakland plant of the American Heat and Power Company in 1911 and found satisfactory (R. 141). Regarding this burner, Mr. King said:

> "In 1911, Mr. Becker and myself made and operated a straight-shot rotary oil burner, having a motor, a fan, a pump, and an atomizing cup, and a means for getting the oil into the cup and returning the surplus to the tank" (R. 140).

Regarding the said atomizing cup, which is in evidence, as above stated, Mr. King said:

> "A. The atomizing cup was made in the form of a deep cup, the oil admitted at the rearward end; the shape and pitch of the side walls being designed in such a manner as to retard the flow of the oil from the point of intake to the point of discharge a sufficient time so that the absorption of reflected heat would reduce the viscosity of the oil and cause the point of ignition to take place immediately upon the discharge from the periphery." (R. 142.)

Regarding such burner, the witness Becker said:

> "Q. What tests, if any, did you make with device?
> A. It was actually installed in the furnace, fire-brick lined, and it was in actual operation.
> Q. With what success?
> A. It worked very good, very good success." (R. 154.)

It will be noted such atomizing cup, in evidence, is a full-sized cup, so actually used in 1911 and all the witnesses agree that the atomizing cup, in and by itself, is a complete instrumentality for use in one of these rotary burners. Obviously, the construction and use of such a cup in an oil burner, actually operating in a furnace, is a complete reduction to practice of such cup and constitutes the same a complete invention forming a part of the prior art. Even a few minutes' actual use of such a full-size cup would be sufficient to demonstrate its practicability as an atomizing cup.

At the time this cup was made and used, and for a considerable time thereafter, the American Heat & Power Company and the Standard Oil Burner Company were not marketing the horizontal type of rotary burner and, for this reason, they did not embody such King-Becker cup in their burners, because the same is a cup designed for use with the horizontal rotary type of burner. However, when the Standard Oil Burner Company began making the horizontal type of rotary burner, it adopted and used the identical form of atomizing cup so designed and used by King and Becker in its predecessor's Oakland plant, and it is this form of atomizing cup that is embodied in the Bunting Iron Works' burner complained of as an infringement.

In other words, years after the Bunting Iron Works' predecessor developed and used at its plant

just across the Bay, this particular type of atomizing cup having a vertical perforated partition and rearwardly projecting flange, Mr. Ray appropriated the the same, just as he appropriated from the prior art every other feature disclosed in his patents.

There is no direct evidence on the question, but in view of the close proximity of such Oakland plant, where such cup was used, and Ray's San Francisco plant, and the moving about and intermingling of mechanics employed about the Bay, the inference is almost irresistible that Ray knew about such cup and merely adopted it for his own use. He had a right to use the same as it was part of the unpatented prior art. However, he has no right to prevent the successor of the company that developed such cup, from also using the same. However, the prior 1895 Eddy patent No. 540,650 discloses substantially the same form of cup having the perforated vertical partition and rearwardly projecting flange into which the oil is fed. The Fesler, 1912 patent, also discloses a cup having the rearwardly projecting flange, forming a channel into which the oil is fed by the oil pipe having a deflected or bent end.

The testimony regarding the King-Becker 1911 burner is clear and convincing and uncontradicted. Parts of the device itself are in evidence and a drawing of the device, executed and attested contemporaneously with the use of the device in 1911, are also in evidence. The device is of such a nature that a

short use thereof in a furnace was sufficient to fully demonstrate the success of the same. There was no secrecy about such use. It was in the open. Therefore, the making and successful use of such device constitutes the same a part of the prior art. However, in view of the other prior art devices of the same general form, construction and mode of operation, defendant's case is not dependent upon this King-Becker development. It is, however, of particular interest because of the conclusion and inference, from all the surrounding facts and circumstances, that Ray knew of the same and followed his usual course of adopting and appropriating, from the prior art, the various features which appealed to his mechanical judgment and discretion.

Opposing counsel seek to show a well defined line of development in this art through certain types of burners, each type being used during a certain period and then abandoned and followed by another type. There is no justification for such contention. The prior art shows the development of all the types at various times—that is, prior art vertical and rotary types, saucer-shaped and straight-shot flames, respectively, both precede and succeed one another.

Opposing counsel seek to impress the Court with plaintiffs' large sales of their burners. The fact is, in view of the development of the oil industry and the general use of oil as fuel in recent years and, therefore, the general use of oil burners of all types,

the sales of burners by plaintiffs are very small. Also, only 24 burners, as disclosed in the first Ray patent, were ever sold (R. 185). However, extensive sales cannot aid claims which are void for want of invention. (*Huebner-Toledo Breweries Co.* vs. *Matthews Gravity Carrier Co.,* 253 Fed., 435, 447.)

VII.

Dates Relating to Ray's Activities

Ray states that in November or December, 1913, he made his first drawing disclosing his burner and that, between March and April, 1914, he made his first model burner. This burner was not hinged to the furnace but permanently attached thereto and the centrifugal fan therein did not embrace any diaphragm. In other words, in appropriating the old form of centrifugal fan disclosed in the Hamann 1905 patent, Ray did not, at first, utilize the Hamann diaphragm 33. It is obvious that this first burner did not embrace all the elements found in the claims of the first Ray patent (R. 177). Furthermore, Ray does not state he ever tried out this burner of March-April, 1914, so the same has no bearing or relevancy. As he said:

> "Q. Was that device put to use or tried out?
> A. That particular one, I don't know, but the next ones we built were." (R. 178.)

Ray's next step was to make another drawing on September 13, 1914 (R. 178), and in October, 1914, his second burner was made (R. 180).

As all the prior art, relied on herein, antedates November, 1913, the earliest date even mentioned by Ray as having any relevancy to his work with the burners involved herein, it is unnecessary to further discuss Ray's testimony regarding these dates.

VIII.

Estoppel Defense

The defense of estoppel is based upon the following facts: On December 20, 1915, the then owner of the King patent, American Standard Oil Burner Company, filed in the lower court its bill of complaint against W. S. Ray Manufacturing Company, and therein alleged the infringement of the King patent; on September 1, 1917, the Ray Company filed its answer in said suit *but did not file any cross-complaint charging the infringement of the first Ray patent, sued on herein, notwithstanding that, at that time, the American Standard Oil Burner Company was making and selling the type of burner thereafter made and sold by its successor, Bunting Iron Works, and charged, in the complaint herein, to be an infringement of the said Ray patent.*

By reason of the failure of the herein plaintiffs, in said suit, to charge infringement of said first Ray patent by such manufacture of the same burner, herein charged to infringe said patent, the said American Standard Oil Burner Company was entitled to rely on such silence of plaintiffs herein and thereby acquired the right to continue such manufacture of said type of burner. In other words, it was the duty of plaintiffs, at that time, to assert their claim of infringement and not, by their silence, mislead defendant's predecessor into a feeling of security prompting

it to proceed and build up a business in such type of burner. Being so estopped from maintaining an infringement suit on the first Ray patent against defendant's predecessor, plaintiffs should likewise be estopped from maintaining this suit against the Standard Oil Burner Company's successor, which naturally and properly relied on the foregoing facts and situation when it succeeded to the business of the Standard Oil Burner Company.

The Standard Oil Burner Company began making the said type of oil burner as early as 1915 (R. 184). It is thus apparent the following cases are in point:

In *Swain* vs. *Seamens,* 9 Wall., 254, 274, Mr. Justice Clifford said:

> "Where a person tacitly encourages an act to be done he cannot afterwards exercise his legal right in opposition to such consent, if his conduct or acts of encouragement induced the other party to change his position, so that he will be pecuniarily prejudiced by the assertion of such adversary claim."

These same principles have been frequently referred to and adopted by the Supreme Court of the State of California:

Carpy vs. *Dowdell,* 115 Cal., 687;
Scott vs. *Jackson,* 89 Cal., 262;
Dolbeer vs. *Livingston,* 100 Cal., 621;
Hostler vs. *Hays,* 3 Cal., 303;
Mitchell, vs. *Reed,* 9 Cal., 204.

In the case of *Starrett* vs. *J. Stevens Arms & Tool Co.,* 96 Fed., 244, it appeared that the complainant was aware of the manufacture by the defendant of the calipers complained of, and that certain correspondence ensued, in which was discussed the question of the infringement, complainant claiming an infringement, and the defendant denying it. In this connection the Court says:

> "There was manifest good faith in the claim of the defendant that it was not infringing the complainant's device, and it would operate as a great injustice at this late day to interfere with an established business conducted under an open claim of right for so many years. The laches in this case are such as to debar not merely the claim for profits, but any claim to the interposition of a court of equity."

Conclusion

Opposing counsel endeavor, in every possible way, to bolster up the contention that Ray made an invention, by criticizing the defendant's conduct in appropriating from the prior art, the same old, prior art instrumentalities so appropriated by Mr. Ray. The prior art was open to all and every mechanic in this art was free to utilize the prior art devices. Ray appropriated from defendant's predecessor the atomizing cup developed by that concern; Ray appropriated from defendant's predecessor, the oil feed and excess oil return system used by that concern; and Ray appropriated from the other prior art, all of the rest of the features disclosed in his patents. He was justified in adopting such prior art instrumentalities but he was not justified in attempting to monopolize them.

Judge Bourquin, in the light of the proofs and testimony, produced and adduced in open court, has found and decreed that only mechanical skill was exercised by Mr. Ray and that, therefore, the patent claims involved herein are void for want of invention. *The question of invention is one of fact* and the lower Court has made its finding in respect to such question or issue.

> "The question is not whether the patents in suit are directly anticipated by either of the prior patents mentioned, but whether in view of the prior art the patents involved invention. This

question of the presence or absence of invention is one of fact, to be answered in the light of all pertinent considerations. *Herman* vs. *Youngstown Car Mfg. Co.* (C. C. A. 6th Cir.), 191 Fed., 579, 112 C. C. A. 185; *Ferro Concrete Co.* vs. *Concrete Steel Co.* (C. C. A. 6th Cir.), 206 Fed., 666, 668, 124 C. C. A. 466; *Loose Leaf Co.* vs. *Loose Leaf Binder Co.,* 230 Fed., 120, 144 C. C. A. 418. (Decided by this Court December 15, 1915.)"

Zimmerman vs. *Advance Machinery Co.,* 232 Fed., 866, 869 (C. C. A. 6th C.).

In the case of *North American Exploration Co.* vs. *Adams,* 104 Fed., 404, it is said:

"This was the conclusion reached by the Court below after a careful consideration of all this evidence. It is settled by the repeated decisions of the Supreme Court and of this Court that where the Chancellor has considered conflicting evidence and made his finding and decree thereon, they must be taken to be presumptively correct and unless an obvious error has intervened in the application of the law or some serious or important mistake has been made in the consideration of the evidence, the findings should not be disturbed." (Citing many cases.)

To the same effect are the words of this Court in the case of *Moyer, et al.,* vs. *Butte Miners' Union,* 246 Fed., 657, 663, wherein it is said:

"The present case is not one which calls for departure from the general rule that where there is a serious conflict in the evidence, and the District Court has had the advantage of seeing and

hearing the witnesses, and has decided that the weight of the testimony as to the existence of a fact is with the one side as against the other, the appellate Court will not disturb the conclusion of the lower Court, but will confine its review to the questions of law presented for its consideration."

In view of the foregoing, we respectfully submit that the decree of the lower Court dismissing the bill of complaint herein should be affirmed.

Respectfully submitted,

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